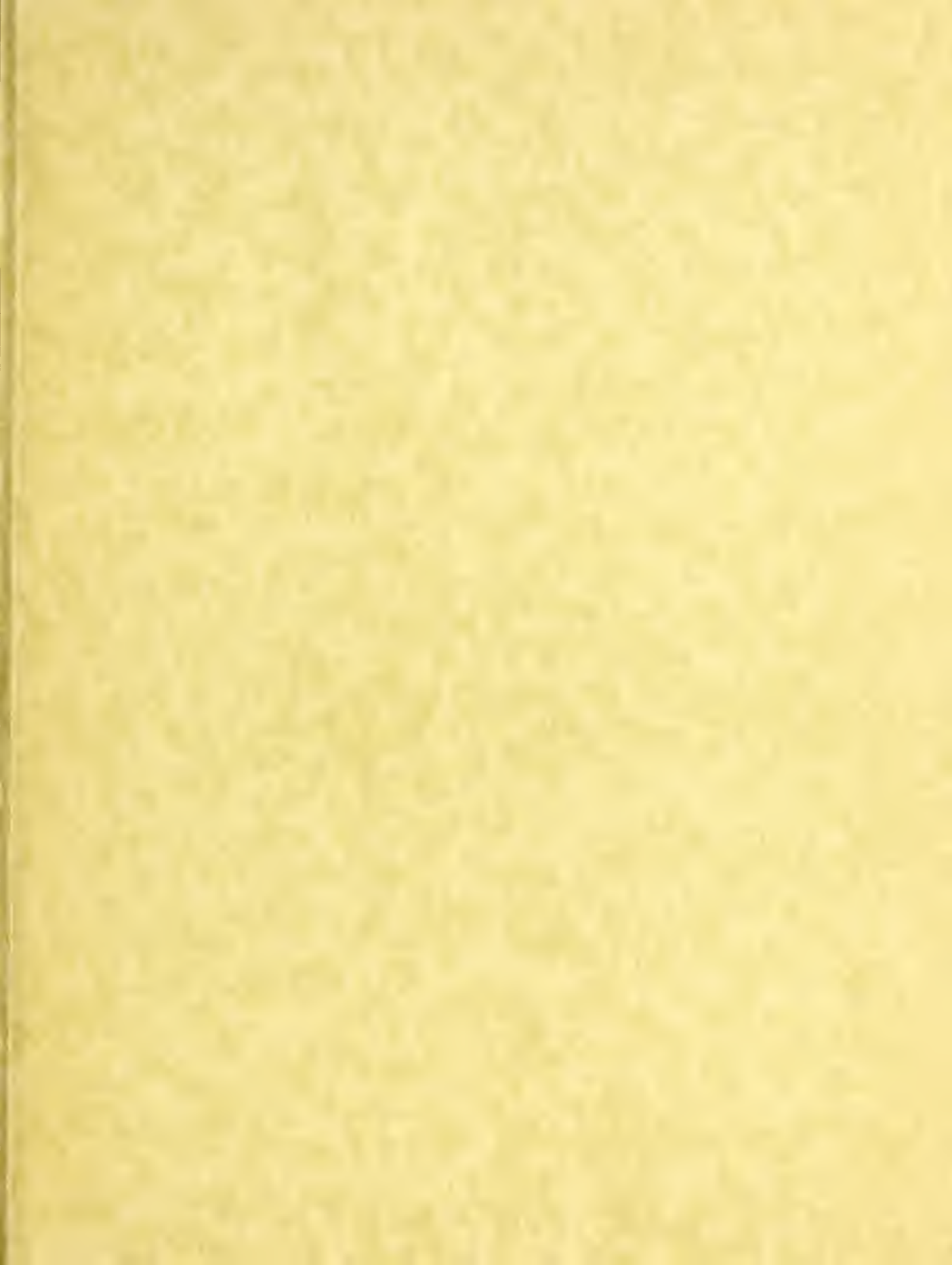
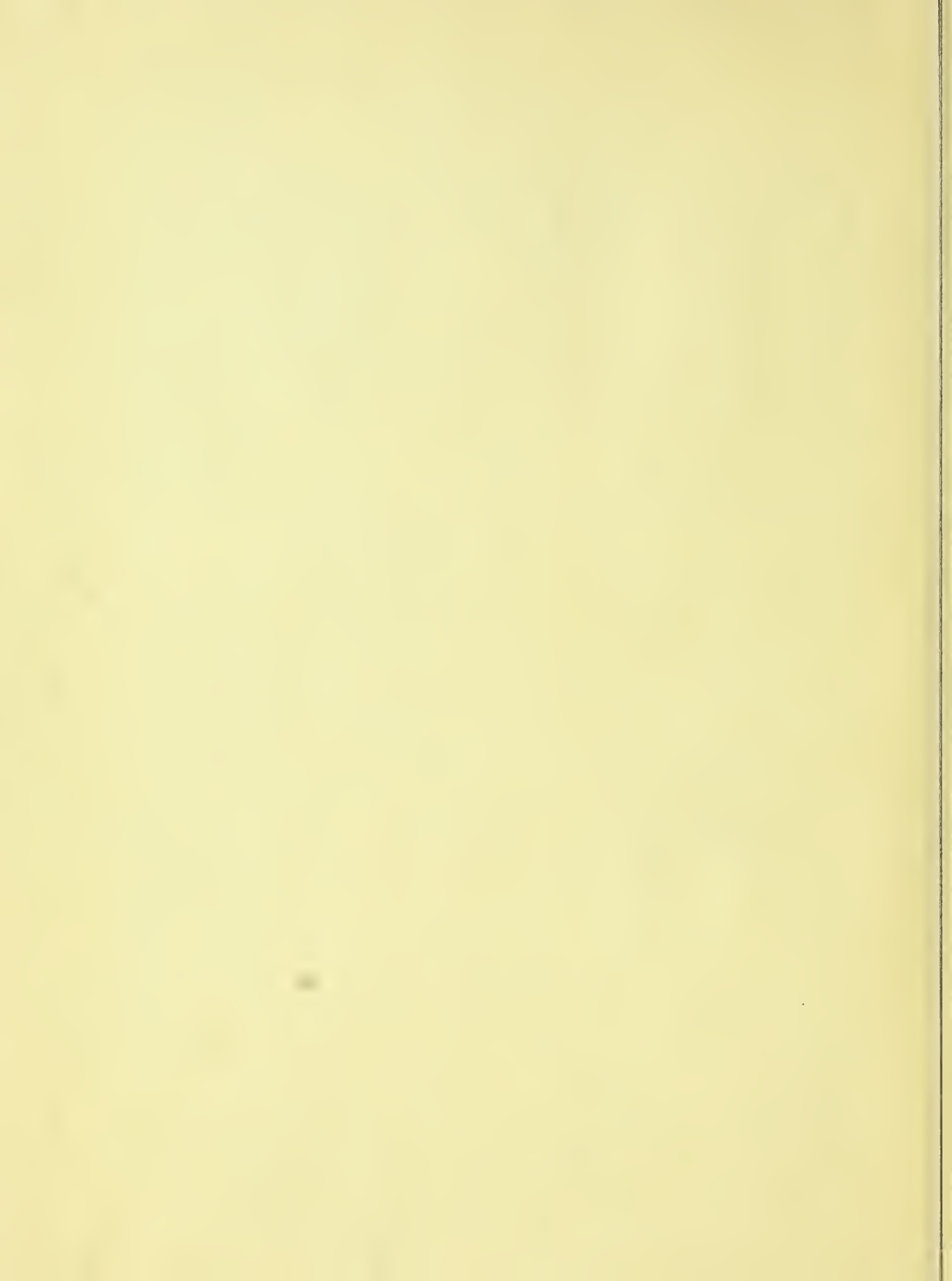




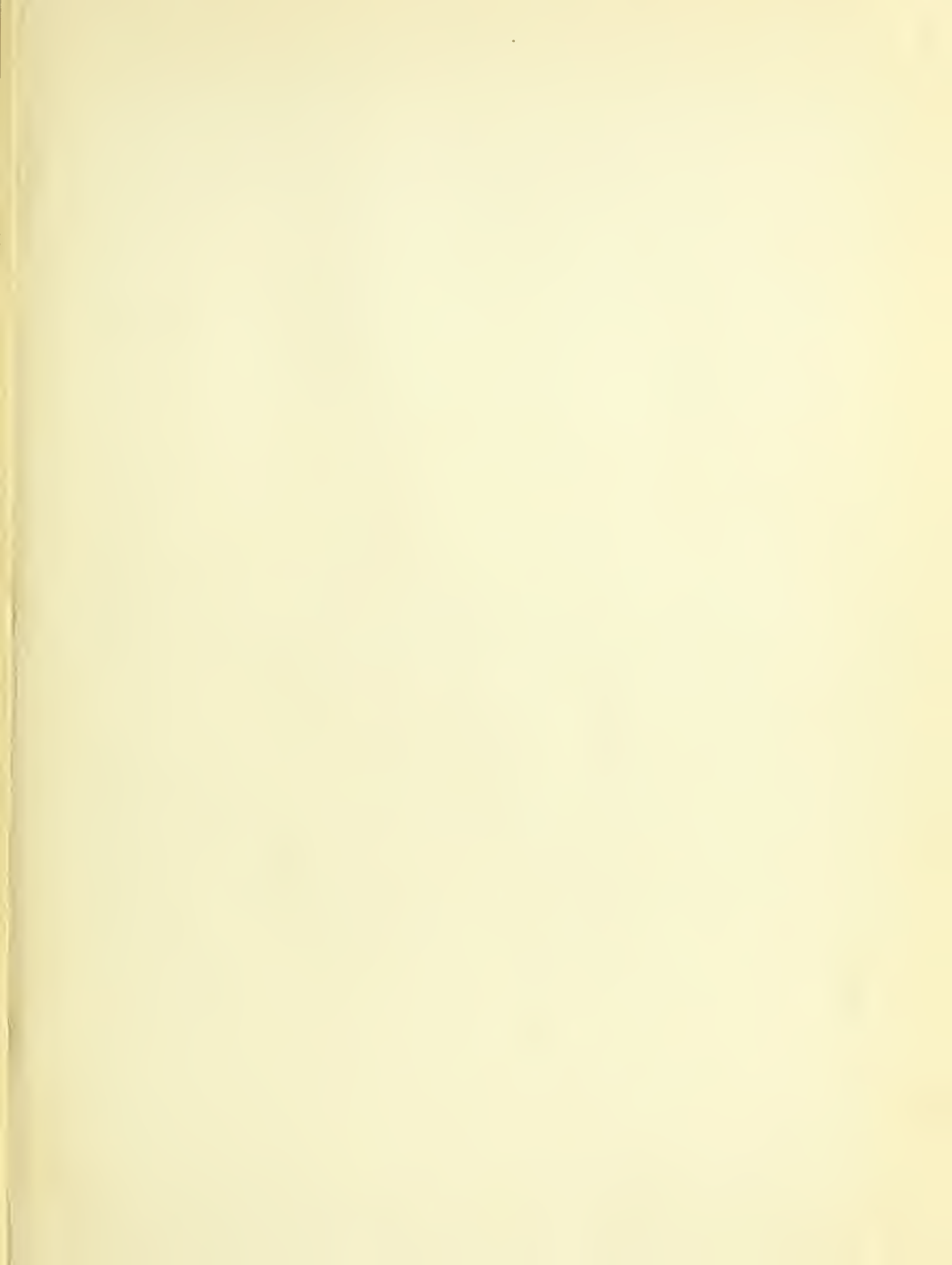
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# THE INSECT PEST SURVEY BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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Volume 7

March 1, 1927

Number 1

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BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING



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# INSECT PEST SURVEY BULLETIN

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Vol. 7

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No.1

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## INTRODUCTORY

With the last number of Volume 6 of the Insect Pest Survey Bulletin, we instituted a slight change in this publication by issuing a 10th number in which the year's entomological features were summarized. This was the result of many requests for an annual summary similar to the one prepared in 1922 and published in the form of a Departmental Bulletin (U. S. D. A. No. 1103).

It was felt impractical to issue a printed annual summary, as the necessary time involved in preparing, editing, and printing such a publication made it available at so late a date that much of its value was lost.

This year the Survey will issue to its collaborators a questionnaire form covering several of the most widely distributed and important insect pests, with the hope that this may result in the Survey receiving from those carrying on investigations on one or more of these pests, data of a much higher statistical value, and of a more comparable nature than could be obtained by cursory reports. The Survey does not wish its collaborators, however, to feel that the incidental notes on all insect conditions made in the course of their regular activities are not highly appreciated by the Survey and urges its reporters to continue their general reporting to as great an extent as their time will permit.

The season in general is not far enough advanced to have developed any outstanding features at the time this first number of volume 7 is issued.

GENERAL FEEDERS

GRASSHOPPERS (Acridiidae)

- Montana -  
South Dakota W. B. Mabey (February 15): Last fall, in a survey of the eastern part of Montana bordering South Dakota, especially Wibaux and Fallon Counties, considerable numbers of eggs were found of Melanoplus atlanis Riley, Camnula pellucida Scudd., and Melanoplus bivittatus Say. There is likely to be a small grasshopper outbreak in this territory.
- California T. D. Urbahns (February 17): Grasshoppers covering such species as Melanoplus differentialis Thos., Camnula pellucida Scudd., Melanoplus marginatus Scudd., Melanoplus devastator Scudd., and others, have caused less destruction of crops than in previous years on account of the large quantities of poisoned bran mash which have been used by growers throughout the State.

MORMON CRICKET (Anabrus simplex Hald.)

- Montana W. B. Mabey (February 15): Our big problem this coming season will probably be the Mormon cricket. In Lake and Sanders Counties, in the western part of the State, this insect now infests some 250,000 acres, or at least double the territory infested the previous season. During the season of 1926 it did damage amounting to over \$120,000. A survey last fall showed that an unusual number of eggs were layed and eggs collected since our recent cold weather have hatched normally, so unless something unforeseen happens, we expect quite a problem on our hands this coming spring. Through this Department and with the use of the County Insect Pest Law we expect to spend some \$15,000 on the control campaign.

WIREWORMS (Elateridae)

- Montana W. B. Mabey (February 15): Wireworms are gradually increasing and are ever becoming a more serious problem, especially with our potato growers.

CEREAL AND FORAGE-CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Pennsylvania C. C. Hill and H. D. Smith (February 3): The wheat stubble is very lightly infested by the spring generation of the "fly." Volunteer wheat was found to be plentiful and in general heavily infested. Examination has shown that puparia in the volunteer wheat are very lightly parasitized and for this reason may prove a source of considerable infestation



during the coming season. For the most part the fall wheat was lightly or not at all infested, with the exception of that in certain localities along the Susquehanna Valley, where infestation was very heavy.

H. E. Hodgkiss (February 16): For the last five years, including 1926, the Hessian fly has not been abundant in Pennsylvania except in 1922. Since that time the Hessian fly has decreased so as to be a relatively unimportant consideration. In 1926 the spring brood was large, but the damage was not extensive. The records of our planting demonstration plots for 1926 indicated that there was little infestation in these plots at the time of sampling.

Maryland

C. C. Hill and H. D. Smith (February 3): Stubble over the entire State was found to be very lightly infested, and the fall wheat was for the most part sown late and escaped infestation. Volunteer wheat, however, was found plentiful through most of the State and was in general heavily infested. The fly puparia in the volunteer wheat proved to be lightly parasitized and may become a source of considerable infestation during the coming year.

Virginia

H. D. Smith (February 3): Wheat stubble and fall sown wheat were found very lightly infested. There is considerable volunteer wheat in the fields which was found to be moderately infested. The puparia in the volunteer wheat were only lightly parasitized.

West Virginia

W. E. Rumsey (February 18): This insect was not reported to us last year.

North  
Carolina

H. D. Smith (February 3): Both wheat stubble and fall sown wheat were found very lightly infested. There was not sufficient volunteer wheat to be a factor for Hessian fly infestation.

South  
Carolina

J. O. Pepper (February 21): There have been no complaints about the Hessian fly in the past two years and no specimens have been collected during this time.

Ohio

J. S. Houser (February 11): There is some prospect of damage by the Hessian fly in Ohio this coming year, particularly in the west-central part of the State where the wheat-field survey last season indicated that about a dozen counties west of Columbus were rather badly infested. A more disturbing factor, however, is the fact that over much of the wheat-producing section of Ohio harvest was delayed by wet weather to the point where the grain shattered badly. The fall months were unusually wet and this resulted in the shattered grain sprouting, and since clover is a very poor stand we have much more volunteer wheat than is normal. Much of this volunteer wheat which we have examined is heavily infested and gives promise of furnishing quite a heavy spring brood.

- Michigan R. H. Pettit (February 11): Just now the Hessian fly is present in only a scattering way in Michigan, so far as I know.
- Wisconsin S. B. Fracker (February 18): Rare, no reports in 1926.
- Illinois W. P. Flint (February 15): Moderately abundant in volunteer wheat in most areas in the State. Volunteer wheat is present in nearly all stubble fields. There will be some infestation from this source in the spring. Nearly all sown wheat was planted very late, but in most sections of the State but few fields were sown before the fall rains, and a little infestation exists in the sown wheat. The few examinations made show that the fly survived the winter.
- South Dakota H. C. Severin (February 12): The Hessian fly was very scarce in South Dakota during the past year.
- Nebraska M. H. Suenk (February 10): In a general way we know that the Hessian fly is not particularly numerous in the winter wheat fields at this time, and we do not anticipate much, if any, commercial damage to the winter wheat crop of 1927.
- Kansas J. W. McColloch (February 11): There is a rather general infestation of the Hessian fly over much of the State, and in some of the south-central counties, such as Kingman, Reno, and Pratt, there has been some loss, due to this insect. Throughout most of the State, however, the infestation is comparatively light but promises to increase this spring.
- Oklahoma C. E. Sanborn (February 11): The Hessian fly is more abundant than usual and has increased the area of infestation over any year preceding. It now extends as far south as the southern boundary of Payne County, and as far west as 8 miles west of Alva. The northwest part of the State, wherein the infestation lies, is not uniformly infested. Some infestations are heavy, others light.
- C. E. Rude (February 14): Early planted wheat in Woods, Alfalfa, Grant, Kay, Garfield, Noble, and Payne Counties is quite heavily infested. In Garfield County fully 50 per cent of the crop is infested. Greater abundance as compared with an average year. Five samples of 100 plants each from five points in fields showed infestation running from 0 to 95 per cent.
- Montana W. B. Mabee (February 15): The Hessian fly, which came into Montana a few years ago, has practically disappeared. In a survey last fall of the previously infested territory, I could find no signs of it. It has apparently receded from Montana.
- California T. D. Urbahns (February 17): The Hessian fly has been reported active in the fields since January by Mr. Cartwright of U. S. Bureau of Entomology, while light infestations are known to



occur in the upper Sacramento Valley and the Coast districts. This insect is of economic importance only in the regions immediately adjoining the lower Sacramento River and San Francisco Bay district.

TOOTHED FLEA BEETLE (Chaetocnema denticulata Ill.)

Nebraska M. H. Swenk (December 31): During the third week in October from Hamilton County there came a report of an abundance of the toothed flea beetle feeding on young wheat.

GREEN BUG (Toxoptera graminum Rond.)

West Virginia W. E. Rumsey (February 18): We received no reports of outbreaks by this insect last year.

South Carolina J. O. Pepper (February 21): On January 10, specimens of this insect were received from Oconee County and reported as destroying a two-acre field of oats. It possibly occurs in small numbers elsewhere in the State but has not been observed or reported.

Michigan R. H. Pettit (February 11): The green bug did some damage in Michigan for the first time last year. It was more troublesome in the far north than anywhere else, although here and there quite good sized areas suffered.

Alabama J. M. Robinson (February 11): The green bug was not observed last fall or this spring in Alabama.

Mississippi R. W. Harned (February 21): The green bug is seldom a pest of importance in Mississippi. So far this spring we have received no reports about it.

Louisiana W. F. Hinds (February 17): The green bug is apparently unusually abundant this spring.

Wisconsin S. B. Fracker (February 18): Serious damage in some fields in Ashland, Bayfield, Clark, Florence, Oconto, Taylor, Racine, and St. Croix Counties in 1926.

South Dakota H. C. Severin (February 12): The green bug was fairly abundant in South Dakota during the last year and did some harm. It is only occasionally that this insect is found in our State.

Nebraska M. H. Swenk (February 10): No infestation of the green bug has come to our notice during the past fall or winter.

Kansas J. W. McColloch (February 11): As far as our records go the green bug has not been reported in the State this fall or winter.

Oklahoma C. E. Sanborn (February 11): The green bug is again prevalent and has been prevalent all winter. Some known infestations occur

in Canadian and Kingfisher Counties. A few specimens have also been taken in Payne County, but no particular field infestations have been reported.

C. S. Rude (February 14): The green bug showed up in Love County much earlier than usual. In no case is it widely scattered, it being still found in small patches. Also reported from Canadian and Kingfisher Counties.

Texas F. L. Thomas (February 17): We have recently received information with reference to the occurrence of the green bug in Wise County.

Colorado W. B. Mabree (February 16): Nearly every year we have one or two more or less local outbreaks of the green bug in the lower Arkansas Valley. It seldom is very serious, doing its damage mostly to oats but sometimes to wheat also.

Arizona A. A. Nichol (February 15): The green bug is present in the Salt River Valley but there are no records of injury, and grain crops are seemingly in excellent condition.

California T. D. Urbahns (February 17): The green bug is found only upon careful search by a specialist, and is not considered of economic importance.

E. O. Essig (February 23): Noticed last winter but not this.

#### CORN

#### CHINCH BUG (Blissus leucopterus Say)

Pennsylvania H. E. Hodgkiss (February 16): The chinch bug ordinarily is not a pest. There was an outbreak in 1926 in three counties rather widely separated. The cause of this outbreak was not clearly ascertained. It did not gain serious proportions.

West Virginia W. E. Rumsey (February 18): No outbreak of this insect was reported to us last year.

South Carolina J. O. Pepper (February 21): This insect was present the past year in rather large numbers in a number of localities of the Piedmont Section of the State. It caused very serious injury to late corn, in York County, a few small areas of late corn were completely destroyed. Apparently a large number went into hibernation and so far we have not had any very severe weather this winter. No survey has been made to check up on the number surviving the winter.

Florida E. W. Berger (February 24): This insect is known to be present in the St. Augustine grass lawns but does not appear to be active. The chinch bug, to my observation, does its worst injury in the

St. Augustine grass lawns during the fall or during the drier spells in late summer.

- Michigan R. H. Pettit (February 11): The chinch bug is present in small numbers, in the southeastern part of the State only.
- Wisconsin S. B. Fracker (February 18): Very rare, no specimens collected for several years.
- Illinois W. P. Flint (February 15): Present in numbers sufficient to cause damage in a few southwestern or southwest-central counties.
- Mississippi R. W. Harned (February 21): During the summer of 1926 the chinch bug appeared in injurious numbers at several places, but was not reported so frequently as during the two preceding summers. We have no reason to believe that this insect will be abundant during 1927.
- Louisiana W. E. Hinds (February 17): The chinch bug is not often abundant enough to cause any complaint.
- South  
Dakota H. C. Severin (February 12): The chinch bug has been reduced to such numbers through weather conditions that it is again negligible.
- Nebraska M. H. Swenk (February 10): The chinch bug, we know, went into the winter in abundance in a large district in southeastern Nebraska. We have planned to investigate to determine the approximate winter mortality, which we suspect may run fairly high, but as yet we have not been able to make the necessary survey.
- Kansas J. W. McColloch (February 11): The chinch bug situation is rather alarming. More bugs went into hibernation this fall in the north-eastern fourth of the State than at any time in the last ten years. Climatic conditions have not caused any high mortality, and because of snows and rains it has not been possible to carry on as much burning as was formerly done. In view of these facts, it would appear that the chinch bug will be a major problem with us during the coming season.
- Oklahoma C. S. Rude (February 14): In northeastern Oklahoma chinch bugs can be found in the bunch grass but at present there is nothing to indicate that they will be more numerous than usual. Winter burning of waste land was practiced in localities where the bugs were abundant last year.  
  
C. E. Sanborn (February 11): The chinch bug infestation this year will probably be similar to that of last year.
- California T. D. Urbahns (February 17): While recorded from California, it apparently does not make its appearance in the field, and I do



not recall ever having an infestation in this State of the true form, Blissus leucopterus.

E. O. Essig (February 23): So scarce that it can not be found for collections.

CORN EAR WORM (Heliothis obsoleta Fab.)

Texas

T. C. Barber (February 21): Roasting ears for sale in the local city market at Brownsville are heavily attacked by the corn ear worm. The worms are of all sizes from very small to large, indicating a continuous winter development of the species.

ALFALFA

ALFALFA CATERPILLAR (Eurymus eurytheme Boisd.)

California

T. D. Urbahns (February 17): This insect was not so abundant during the season of 1926 as it has been for a number of years previous, although this insect constantly caused heavy losses to alfalfa growers extending from the Imperial Valley in the southern part of the State through the San Joaquin and Sacramento Valleys to the north.

GREEN CLOVER WORM (Plathypena scabra Fab.)

Mississippi

R. W. Harned (February 5): During the latter part of January moths of the green clover worm were received from Iuka in Tishomingo County, and Sibley in Adams County, and also were observed flying here at A. & M. College.

GRASS

GREEN JUNE BEETLE (Cotinis nitida L.)

North  
Carolina

W. A. Thomas (January 20): Several residents of this town have complained of something destroying their lawn grass within the past few days. An examination of some lawns has been made and these were found to be heavily infested with white grubs. In some places the grass was almost completely covered with the loose earth brought to the surface by the grubs. The newly opened burrows are very conspicuous early in the mornings and give the lawn an unsightly appearance. This is the heaviest infestation the writer has observed in this section (Chadbourn) and should it continue through spring serious damage is almost certain to occur.

F R U I T I N S E C T S

GENERAL

APHIDIIDAE

Virginia

W. S. Hough (February 16): Aphis eggs are more abundant on apple

twigs in the orchards of northern Virginia than has been observed in this section (Winchester) for the past five years. Although the winter has been very mild, no eggs have shown the outer shell cracked at the time of this writing.

CODLING MOTH (Carpocapsa pomonella L.)

Illinois W. P. Flint (February 15): Recent examinations in southern and western Illinois by Mr. Chandler and Mr. Bigger show that a high percentage of overwintering larvae have survived. In many orchards large numbers of larvae are found on the trunks of trees, and from present indications, we can expect serious trouble with this insect again in 1927, provided the season is at all favorable.

California T. D. Urbahns (February 17): The codling moth has been unusually destructive in view of the low prices of apples and the lack of proper and thorough spraying by many apple growers. In the pear districts this species is more readily controlled, although the total losses to pear growers would run into many thousands of dollars.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Connecticut W. E. Britton (March 1): The San Jose scale is not an important pest in commercial orchards where dormant sprays are given once in three or four years. We find it occasionally on neglected trees but even there it does not seem to be injuring them seriously.

Rhode A. E. Stene (March 2): We have not observed any alarmingly large infestations of this insect. We come across it occasionally, but there is no indication that it is any more numerous than it has been for the last few years.

New York P. J. Parrott (February 14): This species plays a very insignificant role at present. During the fall of 1926 there were mailed to us at different times specimens of apples which showed infestation, and we observed the scale also during the summer of that year on three-year-old plantings of apples, some of the trees of which were badly infested. Generally speaking, the pest is of no importance in commercial orchards. It is rarely mentioned at meetings of fruit growers and we are seldom called upon to give recommendations relative to control measures. Commercial growers are no longer apprehensive relative to its activities, and if spotting of fruit, especially apples, is noticed, they know how to handle it effectively without calling on State agencies for assistance.

Pennsylvania T. L. Guyton (February 16): The San Jose scale seems to be less abundant than last year. This is just a general impression gathered by the men as they go about, both in the nursery inspection and in the handling of fruit, particularly apples. We have made no official count.

H. E. Hodgness (February 16): The San Jose scale is not a State-wide problem in Pennsylvania. There are only a few isolated orchards where the scale has increased to any extent. There are some indications of increased development where spraying has been poor, otherwise the scale is an unimportant consideration.

Delaware

H. L. Dozier (February 14): The San Jose scale has not been a factor in Delaware orchards for a number of years. At one time in the nineties it was considered our worst and most menacing problem, but now, either because of the more or less systematic spraying of the orchards or else through the agencies of natural parasites, this scale is no longer a serious thing with us. In fact only occasionally does it show up abundantly enough to require remedial measures.

Maryland

P. D. Sanders (February 25): The San Jose scale is on the increase in Maryland. This noticeable increase can be traced to two general tendencies in the State for the past few years.

1. The commercial fruit growers are making an effort to reduce the cost of production by spraying for the scale every other year. As a result considerable fruit injury was noticeable last fall in the commercial orchards.

2. Poor spraying by the small orchardists has allowed the scale to increase. This is especially true in western Maryland where the small orchard is most abundant.

West  
Virginia

W. E. Rumsey (February 18): The San Jose scale occurs throughout the State but is kept down by the regular spray program of the orchardists. It still does its damage on fruit trees in village lots and home orchards that are not properly cared for.

South  
Carolina

J. O. Pepper (February 21): In the Sand Hill or northeastern section of the State an unusual infestation of scale occurred on peach trees this winter. In many orchards parts of trees have been killed. From all observations it appears that lubricating oil emulsions as well as lime sulphur have failed to control. Much effort is being put forth to kill the scale out in this section with this year's dormant spraying.

Georgia

Monthly Letter of the Bureau of Entomology, No. 152 (December, 1926): Observations in the past few months have shown a very heavy mortality of the San Jose scale in the Georgia Peach belt; heavier than at any other time in the last five years. It is believed to be due to twice-stabbed ladybird beetles. In many cases the scale coverings with no bodies under them were found clinging to the trees. The question has arisen whether the unusual abundance of ladybird beetles in 1926 is in any way correlated with the general use of lubricating-oil emulsions for the last several years.

Florida

E. W. Berger (February 24): The San Jose scale is present but I am not aware that there has been anything unusual in its development.



- Ohio J. S. Houser (February 11): The San Jose scale, from reports received this winter and on the basis of some observations made, is perhaps only slightly more abundant than last year. On the whole, I think it can be stated that the standard controls recommended are effectively holding the insect in check where the spraying is properly done. Moreover, natural controls are operating quite effectively in many sections of the State and the scale does not seem to be making great progress even where no dormant spraying is done.
- Illinois W. P. Flint (February 16): The winter survival is apparently about normal. Examinations made during the last month of unsprayed material show from 30 to 45 per cent of the scale alive. These examinations would apply in general to conditions in southern Illinois. Very few badly infested orchards can be found in our larger orchard district; owing mainly to the general use of emulsions for scale control.
- Michigan R. H. Pettit (February 11): The San Jose scale is not making itself an outstanding pest at all. As a matter of fact, we hear a very little about it these days, perhaps because delayed dormant spraying is being pretty universally done.
- Wisconsin S. B. Fracker (February 18): Not now known northwest of Madison. Injurious in Ozaukee and Kenosha Counties. Has been brought under satisfactory control for the present by spraying in Racine, Walworth, and Dane Counties.
- South Dakota H. C. Severin (February 12): The San Jose scale made its appearance in South Dakota on several different occasions during the past fifteen years, but each introduction was destroyed through burning of infested stock.
- Nebraska M. H. Swenk (February 10): No infestations of the San Jose scale have come to our notice during the past fall or winter.
- Oklahoma C. S. Rude (February 14): The San Jose scale is widely scattered over the State and as yet the farm people are not taking hold of clean-up measures readily.
- C. E. Sanborn (February 11): The San Jose scale is more generally prevalent than common and did more damage last year than during many preceding years.
- Alabama J. M. Robinson (February 11): The San Jose scale was present in about the usual abundance over the State.
- Mississippi R. W. Harned (February 21): The San Jose scale is now fairly abundant in every county of Mississippi. It would probably be difficult to find an orchard of deciduous fruit trees that is not more or less infested. The fruit trees growing in practically every town and village in the State are also more or less infested. The commercial orchards and many of the home orchards are sprayed regularly each

winter with a dormant spray, and under such conditions the scale is of little importance. Although the San Jose scale is probably our most important fruit-tree pest, we find that most of the trees are able to survive many years even though infested with this insect. Of course, young small trees that become infested frequently succumb, but after the trees have survived to an age of three or four years, they are usually able to survive for a much longer period. These trees, of course, are probably not so vigorous and profitable as trees that are sprayed and kept practically free of scale insects, but I have on numerous occasions observed trees to remain infested with the scale for many years and continue to bear quite profitable crops from year to year. It would seem that in many cases this is due to partial natural control of the insects combined with the resistance of the trees. Our nurseries are kept free of the scale and no trees are allowed to be sold under any conditions that show scale markings. As a precautionary measure all deciduous trees are fumigated with hydrocyanic-acid gas, but any that show scale markings must be discarded.

- Louisiana W. E. Hinds (February 17): The San Jose scale is undoubtedly serious wherever it occurs, and we have no doubt that it had continuous breeding through the winter season.
- Colorado C. P. Gillette (February 16): We have had no inquiries concerning the San Jose scale during the past year. We know, however, that the scale does occur in some of the orchards in the vicinity of Grand Junction, and probably there is some extremely slight infestation in one locality in Delta County, but for the past two years we have been unable to find any specimens of it at all. In the Grand Junction area we try to treat promptly every orchard where an infestation occurs, but have never been quite able to stamp the insect out. It does very slight damage to the fruit crop in this State.
- Idaho C. Wakeland (February 15): Severe infestations of the San Jose scale on fruit trees occurred only on trees in areas where there had been a small percentage of the insects that survived the winter of 1924-25. These areas were known and spraying was carried on generally in restricted communities in the spring of 1926. As reported in 1926, very little dormant spraying was done in the spring of 1925, and it was not needed, for the winter preceding had killed the insects completely in the fruiting areas of and on all portions of the trees above snow line. Killing was so complete that in large areas there has not been sufficient increase of scale insects to justify the application of dormant sprays again in 1926. There are a few localities even where it appears that spraying will not be conducted this season, so complete was the destruction of scale insects in December, 1924. During the past season a noticeable increase has taken place in all areas where there was a slight hold-over of live insects in 1924-25. In many localities there was little or no injury to fruit during 1926, but the insects are scattered in the fruiting areas of many trees now where they are not suspected by the grower, and

doubtless heavy injury will occur in many localities this season unless control work is practiced. The winters of 1925-26 and 1926-27 have been favorable for the survival of a large percentage of scale insects. The temperature did not reach zero at this station in 1925-26 and 5° has been the minimum for the present winter.

- Arizona A. A. Nichol (February 15): Found scatteringly over the State, but particularly injurious in the Salt River Valley where additional records of the death of pear and peach trees have been made. A very serious infestation was found on Cotoneaster and Pyracantha spp. in an ornamental planting. The pest in this case was evidently introduced into Arizona.
- Oregon D. C. Mote (February 23): Two years ago we made a survey in this district near Corvallis and were unable to find a sufficient quantity of the San Jose scale for experimental tests. This year we have received only one request for information concerning control, in which the writer reported a light infestation in his pear orchard.
- California T. D. Urbahns (February 17): The San Jose scale occurs throughout the State in pear, apple, and peach orchards, but is held in check by the usual lime-sulphur spray applications, and is at present of economic importance only in scattered orchards, some in Yuba County, others in Kings County. If our spraying with lime-sulphur solutions were discontinued, this scale would undoubtedly be of very outstanding importance in the course of two or three years.
- E. O. Essig (February 23): Noticed in a few districts this winter. Not a serious pest as yet.

RED SPIDER (Tetranychus telarius L.)

- California T. D. Urbahns (February 17): Orchard mites are probably among the outstanding pests of economic importance in California. The common red spider heads the list in its destruction to the deciduous fruit trees, especially the French prunes, peaches, almonds, figs, and grapes, and, in addition to this, it frequently destroys fields of beans, cucumbers, and cotton.

PEAR

AN ANOMALA (Anomala sp.)

- Mississippi R. W. Harned (February 17): Inspector F. P. Amsler has found beetles attacking the terminal buds of pear trees at Perkinston. They are reported as working at night. The owner stated that



he was first bothered by these beetles in 1925. They were not noticed during 1926. This year they have appeared in larger numbers than two years ago. These beetles have been tentatively identified by Mr. J. M. Langston as Anomala undulata.?

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

California T. D. Urbahns (February 17): The pear leaf blister mite has been very destructive, causing a loss to pear growers which would probably total somewhere near \$100,000 for the different districts of the State.

PEACH

PEACH TWIG BORER (Anarsia lineatella Zell.)

California T. D. Urbahns (February 17): The peach twig borer is probably the insect of greatest economic importance in California in view of the immense production of canning and shipping peaches. There are two and three generations in different parts of the State, and the destructiveness of this insect is extended throughout the entire interior valley district as well as southern California.

PLUM

CLOVER MITE (Bryobia praetiosa Koch)

California T. D. Urbahns (February 17): The clover mite, known locally as the almond mite, is especially destructive on almonds and prunes throughout the Coast districts and interior valleys of northern and central California.

APRICOT SCALE (Lecanium corni Bouche)

California T. D. Urbahns (February 17): The brown apricot scale continues to develop in abundance on prune trees in most of the prune-growing districts and on apricots wherever they are grown throughout the State. Peach, pear, and plum trees also frequently become infested to the extent of requiring special control measures.

PECAN

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Fab.)

Mississippi R. W. Harned (February 5): A correspondent at Jackson wrote on January 29 as follows: "Last year we set out 1,000 pecan trees of which 146 died. On removing these for replacement it was found that although the tops were dead, the roots of the majority of them appeared to be alive and this kind of worm was

found in the trunk at the ground surface." The specimens that accompanied this letter were identified by Mr. J. N. Langston as Chrysobothris femorata Fab.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

California T. D. Urbahns (February 19): Quite a number of complaints regarding kernel spot of pecan accompanied by nuts showing this trouble have been received from all sections of the State during the past two weeks. The southern green plant bug or stink bug is usually blamed for this injury. The nuts were punctured by insects during the past summer. We believe that kernel-spot of pecan was more widespread and more serious during 1926 than during any previous year. Of course, other insects may have caused part of this injury. We have no definite data to indicate what species of insects were concerned in causing this injury, but assign it to Nezara viridula as that species usually gets the blame.

CITRUS AND SUBTROPICAL FRUITS

MEALYBUGS (Pseudococcus spp.)

California T. D. Urbahns (February 17): Mealybugs of several species, including Pseudococcus citri Risso, Pseudococcus maritimus Ehrh., Pseudococcus gahani Green, and others continue as serious pests of citrus trees, while they are also causing considerable loss to grape and pear growers. In addition to this, they are considered of economic importance to ornamental nursery stock.

SCALE INSECTS (Coccidae)

California T. D. Urbahns (February 17): Citrus scale insects, including the gray scale, Ooccus citricola Champ., the black scale, Saissetia oleae Barn., the red scale, Chrysomphalus aurantii Mask., and others continue to be very destructive throughout many of the orange and lemon districts. In some districts control is reasonably successful by the use of oil sprays, while in others double treatment by both spraying and fumigation is necessary.

SPIRAEA APHID (Aphis spiraeicola Patch)

Florida J. R. Watson (February 15): Citrus aphids, which were getting very numerous in December, received a severe setback in January through the killing of all tender foliage by the severe freezes of that month. Most of them starved to death through lack of food. However, they are rapidly increasing and give promise of doing damage to the tangerine crop, and perhaps to the blossoms of orange.

EUROPEAN RED SPIDER (Paratetranychus pilosus Can. & Fanz.)

California T. D. Urbahns (February 17): The European red mite, known in California as the citrus red spider, is generally distributed throughout California, but most severely attacks the fruit trees through some of the southern counties and in the San Joaquin Valley. It is frequently found present in rather abundant numbers.

FIG SCALE (Lepidosaphes ficus Sign.)

California T. D. Urbahns (February 17): The fig scale is gradually increasing in abundance throughout the central San Joaquin Valley and becoming quite a serious pest of the Kadata or canning figs, as well as the drying figs.



TRUCK - CROP INSECTS

MISCELLANEOUS FEEDERS

MONARCH (An sia plexippus L.)

Mississippi

K. L. Cockerham (October 31): On this date I observed a very unusual flight of these butterflies. There were literally thousands of them in flight, and all going in a westerly direction. The flight continued for a good portion of the day, and is the first great flight of this species that I have observed at this locality (Biloxi).

FOUR-SPOTTED CABBAGE FLEA BEETLE (Phyllotreta bipustulata Fab.)

Mississippi

R. W. Harned (February 10): At McComb, in Pike County, this insect was attacking tomato, eggplant, beet, popper, and turnip plants.

CUTWORMS (Noctuidae)

Alabama

J. M. Robinson (February 11): Cutworms have been active throughout December and January, attacking vegetables particularly.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Mississippi

R. W. Harned (February 5): Three rather serious complaints in regard to the seed corn maggot have been received recently. One farmer, at Bassfield, wrote as follows, on January 25: "They were killing all my English peas, turnips, radishes, and in fact all plants that have come up so far." The county agent at Furvis sent specimens to us on January 29, and stated that they were ruining English peas. Inspector N. D. Peets sent specimens from Crystal Springs on February 1, with the information that they had destroyed  $1\frac{1}{2}$  acres of cabbage.

TURNIPS

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Mississippi

R. W. Harned (February 5): Inspector R. P. Colmer, at Moss Point, reported as follows on January 19. "In December I was called to Lucedale in George County to investigate insects that were damaging turnips. Besides the turnip louse I found D. duodecimpunctata eating some of the turnips. The worst thing about these beetles was that they were clinging to the leaves as the plants were being gathered for canning. The owner feared that some of them would be canned with the leaves

and that he might be liable for a damage suit. I recommended that he dust with nicotine sulphate ahead of the pickers. This gave excellent results and the beetles caused no more trouble. The nicotine has also kept the lice down."

R. W. Harned (January 19): This plant louse, Rhopalosiphum pseudobrassicæ Davis, has been especially abundant during the fall and winter. Complaints have been received from many parts of Mississippi. At many places it seems to have completely destroyed the winter turnip crop.

Louisiana

W. E. Hinds (February 17): The turnip aphid at Baton Rouge is apparently unusually abundant this spring.

TURNIP WEEVIL (Listroderes obliquus Gyll.)

Mississippi

R. W. Harned (January 19): A letter from Dr. L. O. Howard, dated January 12, 1927, is as follows: "The larvae on forget-me-nots collected at Brookhaven, Miss., and sent in by you on January 6th, have been examined by Dr. Boving who tells me that they are partly grown larvae of Listroderes obliquus." Specimens of this insect feeding on turnips were also received from Gloster, on January 13. A complaint in regard to damage caused to turnips was also received from Brookhaven, on January 13. (February 5): Quite a few complaints have been received recently in regard to damage done to truck crops by the turnip weevil. Serious damage to lettuce and turnips at Hattiesburg was reported on January 24. One grower at Ellisville stated, on January 26, that these insects had destroyed one-half acre of turnips on his property. Another grower, at Barto, in Pike County, stated that they were eating his turnips, lettuce, and cabbage. One complaint in regard to damage done by this insect to onions was received on February 1, from Laurel. On February 9, a correspondent at McComb, Pike County, sent tomato plants that had been eaten by insects. These were accompanied by a number of small larvae that J. M. Langston tentatively determined as Listroderes obliquus. The correspondent also reported that these insects were eating eggplant, pepper, beet, and turnip plants. On February 9, Inspector J. E. McEvilly reported a 100 per cent infestation of this insect in a turnip patch belonging to a grower at Waynesboro, Wayne County.

R. W. Harned (February 25): Listroderes obliquus continues to be by far the most important pest of gardens in the southern part of the State. Serious complaints in regard to the injury caused by this species have recently been received from Jackson, Jones, Perry, and Wayne Counties. These reports indicate that the turnip crop is one of those most seriously injured. This really is serious because one of our most important green vegetables at this time of the year is turnip greens.

Louisiana

W. E. Hinds (February 17): The Australian tomato weevil larvae were very abundant and seriously injuring crops of carrots, shallots, etc., around Destrehan and St. Rose during the last week of January. Control by dusting with calcium arsenate was satisfactory on carrots and exposed leaf areas while applications of sodium silicofluoride with 10 per cent hydrated lime appeared to kill not only the larvae that were on the exposed surface of shallot leaves but even those which had burrowed in and were entirely concealed within the leaf.

WAVY STRIPED FLEA BEETLE (Phyllotreta sinuata Steph.)

Florida

M. D. Leonard (October 7): About an acre of young plants of turnips at Arcadia were being badly damaged, the leaves being riddled with holes.

STRAWBERRY

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

Oregon

D. C. Mote (February 23): On February 9 we found overwintering adults of Brachyrhinus ovatus. We examined about 6 plants in a 4-acre field and found from three to five live weevils to a plant. We also found the immature larvae in the soil near the fibrous roots. Every plant we examined also contained the larval stage of the crown moth, Agrotia rutilans Hy. Ed.

A PLANT BUG (Pamera sp.)

Florida

J. R. Watson (February 15): Unusually dry weather during January and the first half of February caused considerable trouble on strawberries by this species. It is unusually troublesome to strawberries in late spring (April and May), but seldom gets abundant at this time of the year.

RED SPIDER (Tetranychus sp.)

Florida

J. R. Watson (February 15): Unusually dry weather during January and the first half of February caused considerable trouble on strawberries from red spiders. These spiders are unusually troublesome to strawberries in late spring (April and May), but seldom get abundant at this time of the year.

Louisiana

W. E. Hinds (February 17): Red spiders are exceptionally abundant, as winter host plants have not been killed. Damage to strawberries from red spider attack is greater than usual.



PYRALID

Mississippi

R. W. Harned (February 25): On January 17, Mr. P. K. Harrison collected some larvae on strawberry plants at Picayune. These were sent to Dr. L. O. Howard. A letter from him dated February 1, states that they were determined by Mr. August Busck as pyralids, not the strawberry leaf-roller, Ancylis comptana Froel.

BEANS

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Florida

M. D. Leonard (October 19): Moderately abundant in several patches of beans and on volunteer corn plants at Hastings, but doing no appreciable injury. Mr. Fletcher, who determined the specimens, states that he is unable to find a previous record of the occurrence of this species in Florida.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Alabama

J. M. Robinson (February 11): The pea aphid is showing up in vetch fields, giving the field the appearance of brown spots. The parasites, however, and predacious insects are trying to catch up with the aphid infestation.

Oklahoma

C. E. Sanborn (February 11): The pea aphid is present in Woodward County and doubtless prevalent in other counties although not reported.

MELONS

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

California

T. D. Urbahns (February 17): This insect has apparently been increasing in numbers. It develops mostly in the grain fields and alfalfa fields, and the adults later migrate to truck crops, including such as melons and celery. The adults also attack the ripe fruit of apricots and peaches as well as the foliage and blossoms of various fruit trees.

ONIONS

ONION THRIPS (Thrips tabaci L.)

Louisiana

W. E. Hinds (February 17): The onion thrips are particularly abundant and serious in their attack on winter growing crops of onions, shallots, carrots, etc.



CELERY

MOLE CRICKET

Florida

M. D. Leonard (October 7): Several plantings set in a field at Sneed's Island, Manatee County, are moderately infested. The land being prepared for the reception of celery plants is liberally infested by the burrows.

BEETS

SUGARBEET LEAFHOPPER (Eutettix tenellus Baker)

Montana

W. B. Mabey (February 15): Last fall a survey was made to determine the presence or absence of the sugarbeet leafhopper. This insect was found in Sanders, Lake, Missoula, and Ravalli Counties, although not in very great numbers. We also secured one specimen in Jefferson County, and two in Park County. None were found in our present sugarbeet growing areas and at present we feel that it is rather doubtful that any of our territory will furnish permanent breeding grounds for this insect.

GREEN PEACH APHID (Myzus persicae Sulz.)

Utah

Geo. F. Knowlton (January 18): This aphid is damaging beets used for experimental purposes in the greenhouse at Logan.

POTATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Mississippi

R. W. Harned (February 25): Adults of the Colorado potato beetle were collected on Irish potatoes at Picayune, on February 21, by P. K. Harrison.

CABBAGE & COLLARD

HARLEQUIN BUG (Murgantia histrionica Hbn.)

Mississippi

R. W. Harned (February 25): Reports in regard to the Harlequin cabbage bug have been received from different parts of the State. The only specimens actually sent in, however, came from collard plants at Vancleave, Jackson County, on February 14, and from Cumberland, Webster County, on February 8.

# SOUTHERN FIELD - CROP INSECTS

## COTTON

### BOLL WEEVIL (Anthonomus grandis Boh.)

- South Carolina J. O. Pepper (February 21): Very few weevils were present in the Piedmont Section of the State during the entire season last year. In the Coastal Section very few were present early in the season but a fair infestation could be found late in the summer. Taking the State as a whole the weevil was not a serious problem last year. No survey has been made to determine the number of weevils surviving the winter.
- Florida E. F. Grossman through E. W. Berger (February 23): Activity of the army leaf worm in stripping a large per cent of the cotton fields, followed by a rather early frost which killed all new growth of cotton fruit, tended to cut down the number of weevils fitted for successful hibernation. Weevils placed in hibernation cages were active to date (excepting a period of one week following the coldest wave of the winter), indicating that the winter was not severe enough to considerably thin out those weevils which entered hibernation. Continued mild weather should bring a maximum number of weevils out of hibernation. The infestation for the coming season, however, is expected to be rather light.
- Oklahoma C. E. Sanborn (February 11): The boll weevil will probably be more serious since it dispersed extensively last fall, going as far north as the Kansas line and probably entering Kansas. It is doubtful, however, if it went any farther westward than some of the original boundary lines of previous years. We have had indications that the hibernating worms will overwinter nicely.
- C. S. Rude (February 14): Very large numbers of the weevil went into winter quarters. The weather and field conditions have been favorable for a large percentage to live over winter.
- Alabama J. M. Robinson (February 11): The boll weevil for September, October, and November, 1926, was considerably above normal for the rainfall which (according to Dr. Shelford) is an indication of an unusually large number of insects the following season. If that is the principal factor we should have a lot of insects this year. With the rainfall above normal for the three-month period last year the cotton plants as well as other vegetation grew very profusely and there were tremendous numbers of weevils in the central and southern parts of the State to go into hibernation. We were able to get weevils in greater numbers in Auburn than we have been in the last four years. Our lowest temperature was 11° above zero at Auburn the middle of January. We have not been able to find any weevils at the present time.
- Mississippi R. W. Harned (February 25): Clay Lyle makes the following summary of the boll weevil situation: "The boll weevil infestation

in Mississippi this spring will probably be rather spotted, due to field conditions last fall. A generally heavy infestation was present over the State in early September, at which time practically all the fields were defoliated by leaf worms. Following this general defoliation, much of the older cotton, and especially that on poor land, died or failed to make any new growth, resulting in a greatly reduced weevil population. However, in some cases the younger cotton on bottom lands, stimulated by the fall rains, sprouted out again and furnished abundant food for the weevil until frost. As the past winter has been very mild, a survival above normal is probable in those latter areas."

Louisiana

W. E. Hinds (February 17): No boll weevils have yet emerged from our hibernation cages and I have not had an opportunity to examine moss for weevil population.

Texas

F. L. Thomas (February 17): The boll weevil is active in the Lower Rio Grande Valley on volunteer cotton.

THURBERIA WEEVIL (Anthonomus grandis thurberiae Pierce)

Arizona

A. A. Nichol (February 15): Has been found over a greatly increased area in the southeastern part of the State. The original infestation records in Pima County have been extended up the Santa Cruz Valley into Santa Cruz County. In the Sulphur Springs Valley or Cochise County a generally distributed infestation was found.

COTTON FLEA HOPPER (Psallus seriatus Raut.)

Texas

F. L. Thomas (February 17): Cotton flea hoppers began to emerge at College Station February 16.

PINK BOLL WORM (Pectinophora gossypiella Saund.)

Arizona

California Monthly News Letter, Vol. 9, No. 1 (January 15, 1927): A second infestation of the pink boll worm of cotton has been found in the vicinity of Safford, Graham County, according to an announcement just made by the California Department of Agriculture. There are about 6,000 acres of the present infestation, the Department states, and this is the second infestation found in Arizona within the last month. The infestation is of particular significance to California cotton because the pest is adapted to semiarid conditions, and if it should become established here will cause considerable damage. The California Quarantines relating to this pest have been changed to apply to the State of Arizona.

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (February 17): Sugarcane borer hibernation appears to be in much larger numbers than in 1925-26. Recent examinations have shown that pupation began during the first week of February and is now increasing steadily with a prospect that the first



moths will be coming out before the end of this month. This is at least six weeks earlier than in 1926 and forecasts a serious attack from this pest in the early season with the prospect of six generations during the year instead of five as occurred in 1926.

## INSECTS ATTACKING MAN AND

### DOMESTIC ANIMALS

#### MAN

#### MOSQUITOES (Culicidae)

Montana

W. B. Mabey (February 15): Another serious insect problem in this State is the mosquito in the northern section, principally in Blaine, Phillips, and Valley Counties. Mosquitoes of several species, including Aedes vexans Meig., Aedes nigromaculis Ludl., Aedes curriei Coq., and many others are so abundant that labor will not work in the hay fields and it is practically impossible to use work horses or to keep dairy cattle in this area. It is really a very serious economic problem. We expect to devote a considerable amount of time to this situation next year.

#### MULES

#### A BUFFALO GNAT (Simulium pecuarum Riley)

Mississippi

R. W. Harned (February 25): Buffalo gnats have appeared in large numbers in Yazoo County during the past few days. Newspaper reports state that 40 mules were killed by these gnats on the night of February 22.

## INSECTS INFESTING HOUSES

### AND PREMISES

#### PENTHELISPA SP.

Nebraska

M. H. Svenk (February 1): During the first week in January a complaint was received from Hamilton County, accompanied by specimens, indicating that a cylindrical bark beetle of the genus Penthelispa was infesting the flooring of a residence in Aurora, and doing marked injury.

## STORED GRAIN INSECTS

Illinois

W. P. Flint (February 15): More than the usual number of reports



of damage by this class of insects have come in during the present winter, due probably to a large extent to the condition in which the grain was put into storage.

Nebraska M. H. Swenk (December 31): Complaints of injury by stored-grain pests continued to come in during the last half of October, and up to the end of November, in more than usual numbers.

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella Oliv.)

Monthly Letter Bureau of Entomology No. 152, December, 1926: Perez Simmons reports that recently he and G. W. Ellington discovered that the Angoumois grain moth larvae sometimes leave the grain and spin cocoons in the ground. This is a new fact that appears never before to have been recorded.

A SMALL MOTH (Blabophanes crocicapitella Clement)

Maryland Perez Simmons (January 23): Small, very active moths flying in a house were found to come from an infestation of case bearers feeding on dry onion skins in the bottom of a box of onions, at Takoma Park. This clothes-moth-like species has been recorded from birds' nests and dried white potato (August Busck) and from absinth seeds and refuse (W.T.M. Forbes: Lepidoptera of New York). Forbes gives the distribution as "New York to California, probably general: also in Europe and Hawaii."

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi R. W. Harned (February 25): Argentine ant infestations have recently been found at two new localities, Bond and Greenwood Springs. All ant determinations are made by H. R. Smith.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi R. W. Harned (February 25): We are receiving many complaints in regard to the fire ant, Solenopsis geminata Fab. These ants build their nests in gardens and cause trouble by their habit of taking the small seeds of recently planted vegetables, by their attendance on plant lice, and especially by their pugnacity. In infested gardens when vegetables or berries are gathered, these ants come from their nests in the soil at the base of the plants and get on the hands of the owners where they sting viciously. In a recent letter from Fayette it is stated that an ant (probably this species) enters the pipped eggs of geese and kills the young before they emerge from the eggs.



RECEIVED  
JULY 1927

THE INSECT PEST SURVEY  
BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR MARCH, 1927.

The chinch bug is reported as having started migration from winter quarters to the wheat fields during the last week in February, in southern Kansas. Mortality was generally low over the Kansas chinch bug belt. Eastward the insect seems to be less abundant in winter quarters than usual. Missouri reports serious numbers only in the counties along the western edge of the State.

Somewhat intense infestations of the green bug are reported from the region north of Dallas and Fort Worth, Tex., extending from Love County westward to Cotton County and northward to Kingfisher County in Oklahoma.

Thousands of acres of winter wheat have been destroyed by the false wireworms around Syracuse, Kans. Damage by this insect is also reported from Jennings and Salina, in the same State.

One of the noteworthy entomological events of the month was the launching of the extensive control campaign against the European corn borer.

The pea aphid is appearing in threatening numbers in alfalfa fields in parts of Oklahoma.

The green apple aphid began to hatch in the Winchester section of Virginia on March 14, and at Blacksburg on March 23.

By March 23, the apple grain aphid was abundant in the Blacksburg section of Virginia. It was observed in rather threatening numbers in Morgan County, Illinois, on March 16, and eggs of this insect began hatching the same week in central Missouri.

The first rosy apple aphid was observed in the Winchester section of Virginia on March 18 and in the Blacksburg section on March 14.

The strawberry weevil is reported as unusually abundant and doing serious damage in the Chadbourn section of North Carolina. The weevils began entering the fields on March 7, and egg laying started on March 13.

The Florida flower thrips has been severely damaging beans in the Okeechobee district of Florida.

The first adult of the boll weevil was collected from the field on March 14 in Florida; 3.88 per cent of the adults in the hibernation cages at Gainesville had emerged by February 28. No emergence has yet been observed in

Louisiana. In the Lower Rio Grande Valley of Texas weevils were active in January, feeding on the growth from last year's stalks.

The cotton flea was emerging in rather large numbers about the middle of March in the experimental hibernation quarters at the Texas Station.

The sugarcane borer passed the winter much more successfully than it did the winter of 1925-26 in the Louisiana sugarcane section. Pupation in the field began in the first week of February, and the first moths appeared March 3. This is a month earlier than they appeared in 1926.

One of the most severe infestations by the buffalo gnat ever recorded in the State of Mississippi was at its height during the early part of March this year. This insect was so abundant that in Yazoo County about 70 head of horses and mules were killed. The outbreak extends from the Delta backward to from 5 to 10 miles from the river.

# CEREAL AND FORAGE - CROP INSECTS

## WHEAT

### CUTWORMS (Noctuidae)

Texas F. L. Thomas (March 21): The cutworms, especially the greasy cutworm, have been unusually injurious over a rather large area in south-central Texas. A species, samples of which have not been received, has been reported as damaging wheat and oats in several counties in the northwestern part of the State.

### PALE WESTERN CUTWORM (Parosagrotis orthogonia Morr.)

Oklahoma C. E. Sanborn (March 18): The pale western cutworm, which has been more or less injurious in the northwestern part of the State, especially to wheat, is becoming more general in its appearance and less severe in attack.

### HESSIAN FLY (Phytophaga destructor Say)

Illinois J. H. Bigger (March 21): Slight infestation in fall sown wheat, but heavy infestation in volunteer wheat. Probably a great increase in infestation by the spring brood.

Missouri L. Haseman (March 10): With our ten-year Hessian fly experiment drawn to a close with last summer's harvest we are not continuing as an important station project the ten or a dozen experimental seeding plats throughout the State, and we have had little opportunity of making a survey since wheat harvest. However, those records showed the Hessian fly at a very low ebb without any real danger of the pest causing harm to the coming wheat crop. (March 25): There is no indication that the pest will be of any importance on the coming wheat crop.

### CHINCH BUG (Blissus leucopterus Say)

Missouri L. Haseman (March 10): Chinch bugs went into the winter in large numbers in a number of counties along the western edge of the State, through the north-central part of the State and along the east-central portion, but the unusual rainfall during the fall and early winter months has been very favorable for the pest. Unless a drought develops we are not expecting any real epidemic and in case of drought the destructive infestations will, we believe, be confined to scattered counties or two individual farms. (March 25): In central Missouri the bugs were scarce in winter quarters.

Kansas J. W. McColloch (March 21): Surveys show that the chinch bugs are very numerous in the grassland, and there has been little mortality during the winter. Migration to the wheat fields has occurred in some areas. On February 22, bugs were flying in southern Kansas.



GREEN BUG (Toxoptera graminum Rond.)

- Mississippi R. W. Harned (March 28): About March 16, A. L. Hamner spent 30 minutes searching for the green bug in an oat field at A. & M. College, Miss., but none were found.
- Missouri L. Haseman (March 10): We have made no wheat survey, and the green bug has not been reported by any growers.
- Oklahoma C. E. Sanborn (March 18): The green bug is increasing its boundary line of infestation. Data from both Federal and State entomologists indicate that its heaviest infestation lies in the country north of Dallas and Fort Worth, Tex. A great deal of small grain has already been plowed under because of damage by the green bug. The infestation in Oklahoma lies north and westward from the infestation in Texas, extending from within Love County westward to within Cotton County, thence northward into Kingfisher County. Very recently parasites have been noticed. Indications are that the infestation will become rather severe before parasites can develop to such an extent as to bring it under subjecti

PLAINS FALSE WIREWORM (Eleodes opaca Say)

- Kansas J. W. McColloch (March 20): Reports of false wireworm injury to wheat have been received during the past two weeks from Quinter, Jennings, Syracuse, and Salina. At Syracuse thousands of acres of wheat have been destroyed. All reports are from areas where there was little rain last fall and where much of the seed failed to germinate.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

The \$10,000,000 European corn borer campaign began March 14. The infested area now includes about 60,000,000 acres.

The purpose of the campaign is to clean up the borer as far as possible in the infested area and to prevent the serious damage to the corn crop in Illinois, Iowa, and other Corn Belt States that would result from its farther spread. In the clean-up, the cornstalks either will be gathered and burned or plowed under cleanly, care being taken not to drag any debris to the surface afterwards. Corn stubble will be destroyed with a stubble pulverizer. All cornstalks, pieces of cornstalks, and corncobs around barnyards and feed-lots will be cleaned up and burned. The plan is to pay the farmers for work that is done over and above their normal farming operations at a rate not to exceed \$2 per acre for field corn and not to exceed \$1 per acre for sweet corn.

The following are the counties in which the clean-up will be conducted: Indiana: DeKalb and Steuben Counties; and selected townships in Allen, LaGrange, Noble, and Whitley Counties.

Michigan: Bay, Branch, Calhoun, Genesee, Hillsdale, Huron,



Ingham, Jackson, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, Sanilac, Saginaw, Shiawassee, St. Clair, Tuscola, Washtenaw, and Wayne Counties; and selected townships in Kalamazoo and St. Joseph Counties.

Ohio: Ashland, Ashtabula, Carroll, Columbiana, Crawford, Cuyahoga, Defiance, Erie, Fulton, Geauga, Hancock, Harrison, Henry, Huron, Jefferson, Lake, Lorain, Lucas, Mahoning, Medina, Ottawa, Paulding, Portage, Putnam, Richland, Sandusky, Seneca, Stark, Summit, Trumbull, Wayne, Williams, Wood, and Wyandot; and selected townships in Allen, Hardin, Holmes, Knox, Marion, Morrow, Tuscarawas, and Van Wert Counties.

Pennsylvania: Beaver, Butler, Crawford, Erie, Lawrence, Mercer, Venango, and Warren Counties.

New York: Selected townships in Cattaraugus, Chautauqua, Erie, and Niagara Counties.

DINGY CUTWORM (Feltia subgothica Haw.)

Nebraska D. B. Whelan (March 15): This cutworm has been reported both from McCook, Redwillow County, and from St. Paul, Howard County, where it was found in corn ears left in the field all winter.

HESPERIIDAE

Nebraska D. B. Whelan (March 15): From Eustis, Frontier County, some specimens of a hesperiid larva were sent, together with a portion of corn which was badly riddled by its burrows. Our correspondent states that about two-thirds of the stalks were affected in this way.

GRAPE COLASPIS (Colaspis brunnea Fab.)

Illinois J. H. Bigger (March 21): Severe losses expected to corn on red clover land. Wet season might minimize this damage. Large numbers of larvae went into hibernation successfully.

ALFALFA

PEA APHID (Illinoia pisi Kalt.)

Oklahoma C. S. Rude (March 18): This pest is very numerous in Roger Mills, Woodward, and Woods Counties. As yet the damage is not severe.

C. E. Sanborn (March 18): There is a rather serious infestation of the pea aphid on alfalfa in Woodward, Ellis, Woods, and Roger Mills Counties of this State. This pest is not ordinarily controlled in Oklahoma by any insect parasite but is generally quite suddenly controlled by a disease. The disease is not yet prevalent. It generally comes after several weeks of warm weather. I might add that the pea aphid also attacks sweet clover in this State to a very marked extent although the latter has never been damaged beyond recovery. In many instances alfalfa has been damaged beyond recuperation.

J. R. Horton (March 19): Unusually abundant in Woodward County, although I have not seen specimens, I am quite sure it is the pea aphid.

CLOVER

LESSER CLOVER-LEAF WEEVIL (Phytonomus nigrirostris Fab.)

Illinois J. H. Bigger (March 21): Severe damage to clover buds and seed crop expected this spring. Large numbers of adults survived the winter.

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

Illinois J. H. Bigger (March 21): Little severe damage expected this season. Few survived severe fall weather and rains. Some slight damage if we have very favorable weather.

F R U I T I N S E C T S

APPLE

APPLE APHID (Aphis pomi DeG.)

Virginia W. J. Schoene (March 23): According to Dr. W. S. Hough, the green aphids began to hatch in the Winchester section on March 14. L. R. Cagle reports that the first green aphids were observed at Blacksburg on March 23. The green aphids are abundant.

Mississippi R. W. Harned (March 30): Attacking satsuma at Moss Point, Miss. Determinations made by A. L. Hamner.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

Virginia W. J. Schoene (March 23): Oat aphids are abundant.

Illinois J. H. Bigger (March 21): Barring very unfavorable weather, severe damage is probable in the early season. Observed in large numbers first in Morgan County March 16.

Missouri L. Haseman (March 25): Eggs began hatching March 15 to 20. Much more abundant than last year at the same time though in central Missouri not so abundant as during severe epidemics.

ROSY APPLE APHID (Anuraphis roseus Baker)

Virginia W. J. Schoene (March 23): According to Dr. W. S. Hough, the first rosy aphids were observed in the Winchester section March 18. L. R. Cagle reports that the rosy aphids were observed at Blacksburg on March 14. The rosy aphids are present in very small numbers.

CODLING MOTH (Carpocapsa pomonella L.)

Illinois J. H. Bigger (March 21): Severe damage expected. Low winter mortality. Large numbers in hibernation.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Massachusetts A. I. Bourne (March 16): It appears that the tent caterpillars are fully as numerous as a year ago, which will mean a heavy infestation throughout practically the entire State. Campaigns have been started, interesting boys and girls clubs, boy scouts, etc., to collect and destroy the overwintering egg masses, and the program stimulated by a few well chosen prizes offered by various agricultural societies has awakened a very gratifying response on the part of the boys and girls. Already many thousands of egg masses have been collected and destroyed. It is planned to continue this work clear up to the time of the hatching of the eggs. Just what effect this will have upon the later infestation is of course merely a matter of conjecture. In fact, we can not be sure that it will exert any great amount of influence upon the heavy infestation which is statewide. We will be able, in the course of another month, to report to you more definitely on this point.

Arkansas T. J. Baerg (March 19): The caterpillars hatched about four or five days ago. The infestation will probably be moderate.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walker)

Washington R. L. Webster (March 29): Examination of leaf roller egg masses by Mr. Spuler in Spokane Valley showed that there was no damage or any severe outbreak in 1927. Not enough live eggs found to warrant continuation of oil spray wash there.

SPRING CANCKER WORM (Paleacrita vernata Peck.)

Pennsylvania H. N. Worthley (March 21): Moderate numbers seen on road from Butler to Greensburg on the evening of March 11. Observed on window panes of hotel in Franklin (Venango County), March 17.

Missouri L. Haseman (March 25): Male moths attracted to lights March 1 to 15. An occasional specimen was observed.

ROSE LEAFHOPPER (Empoa rosae L.)

Missouri L. Haseman (March 25): Very abundant though still in their winter harbors. Observed, however, in blue grass harbors March 1 to 10.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Nebraska D. B. Whelan (March 15): A portion of a young apple tree



covered with old injury by this insect was received.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Massachusetts A. I. Bourne (March 16): The San Jose scale, which for a few years seemed to be increasing to some extent, has very largely subsided as a pest of prime importance. While it is still present, it is not causing any anxiety. Apparently a very general use of oil sprays made necessary by the rapid spread of the European red mite throughout Massachusetts has automatically controlled the situation, as regards the San Jose scale.

Missouri L. Haseman (March 10): This pest continues to be at a low ebb with a tendency through central Missouri to pick up in numbers. Our fruit growers have it completely under control in all commercial orchard centers.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Nebraska D. B. Whelan (March 15): A badly infested specimen of a pest on apple bark was sent from Howells, Colfax County.

EUROPEAN RED MITE (Paratetranychus pilosus Can. & Fanz.)

Massachusetts A. I. Bourne (March 16): There seems to be a heavy infestation of the European red mite throughout practically all sections of the State. This, of course, is based on the evidence of the overwintering eggs. Although many growers secured good control by the use of oil sprays a year ago, there seems to have been sufficient increase over the State as a whole so that reinfestation took place quite rapidly.

PEAR

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

California T. D. Urbahns (March 22): The blister mite, Eriophyes pyri was active under the bud scales, and eggs were being deposited on pear at Penryn. (March 29): The pear leaf blister mite has caused considerable damage to pear buds in the Sacramento, Napa, and Suisun Counties on account of the mild winter weather. The mites continued active under the bud scales. Spraying in full cluster bud is just beginning.

PLUM

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Mississippi R. W. Harned (March 28): The first complaint in regard to the Southern plum or rusty brown aphid this year accompanied by



specimens came from the property of G. C. Coats at Meridian, Miss., on March 22. Plum trees were reported to be heavily infested. (Determination by A. L. Hamner). (March 30): Attacking plum at Picayune, Miss.

CHERRY

WESTERN PISTOL CASE BEARER (Coleophora sacramenta Heinrich)

California T. D. Urbahns (March 22): On March 4 the pistol case bearer, Coleophora sacramenta, was observed migrating from twigs to the buds and beginning its feeding.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Missouri L. Haseman (March 25): Very abundant though still in their winter harbors. Observed, however, in blue grass harbors March 1 to 10.

C I T R U S   A N D   S U B T R O P I C A L   F R U I T S

SPIRAEA APHID (Aphis spiraeicola Patch)

Florida J. R. Watson (March 19): Aphis spiraeicola Patch has not yet recovered from the freezes of January which killed all tender growth on the citrus trees. They are, however, rapidly increasing in numbers and, unless checked by their fungus disease, indications point to considerable damage later.

DESTRUCTOR SCALE (Aspidiotus destructor Signoret)

Haiti G. N. Wolcott (March 11): A very serious outbreak of Aspidiotus destructor occurred at Cayes, Haiti, on coconut palms. This was reported several months ago by Dr. H. D. Barker as a dying of the palms; and, when recently investigated, the yellowing of the fronds and dying of some of the trees was found to be entirely due to a heavy infestation by this scale. Few parasites or predators, which are usually present, were noted on these palms. The scale had also spread to banana and Mammea americana trees.

ALEUTRODIDAE

Texas F. L. Thomas (February 17): White fly pupae have been received from San Benito. This is the first information of the occurrence of this insect in the Valley that has come to my attention.

# TRUCK - CROP INSECTS

## MISCELLANEOUS FEEDERS

### CUTWORMS (Noctuidae)

- Oklahoma C. E. Sanborn (March 18): Cutworms, especially common garden cutworms, are being reported as more prevalent this spring than usual.
- Louisiana G. H. Bradley (March 26): A species of cutworm has been very bad in my garden this past month, destroying peas, lettuce, spinach, and tomatoes. This garden was all planted to corn last year and was kept fairly well cultivated. One of my neighbors who had some cabbage planted reports that cutworms destroyed every plant that he had.

### SOUTHERN GREEN STINK BUG (Nezara viridula L.)

- Mississippi R. W. Harned (March 30): Although many complaints in regard to the southern green plant bug have been received during the past few weeks, only one lot of specimens has been sent to this office. These specimens came from Peoria in Amite County on March 21.

### APHIDIIDAE

- Florida J. R. Watson (March 19): Aphids have been unusually abundant on truck crops during the past few weeks. Mustard, turnips, radishes, and peas have suffered severely, cabbages and lettuce to a lesser extent.

### WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

- California T. D. Urbahns (March 22): Has been active in fields of vegetable gardens on warm days throughout the winter in the Santa Clara Valley.

### TURNIP WEEVIL (Listroderes obliquus Gyll.)

- Mississippi R. W. Harned (March 30): Adult specimens of Listroderes obliquus were received from Laurel, on March 23, where they were reported as feeding upon collard plants.
- California T. D. Urbahns (March 22): The Australian tomato weevil was active in the various larval stages throughout the winter months in the San Francisco Bay region on turnips, spinach, and carrots.

### TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

- Mississippi R. W. Harned (March 30): Attacking turnips at Yazoo City and Anguilla. Determination made by A. L. Hamner.

### THRIPS (Thysanoptera)

- Louisiana W. E. Hinds (March 14): Exceedingly abundant on many food plants up to the end of February but heavy rains and temperatures down to freezing have reduced their numbers materially.

RED SPIDER (Tetranychus bimaculatus Harv.)

Louisiana

W. E. Hinds (March 14): Red spiders were exceedingly abundant on many food plants up to the end of February but heavy rains and temperatures down to freezing have reduced their numbers materially.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano.)

California

R. R. McLean (March 25): Pepper weevil, Anthonomus eugenii Cano, is doing considerable damage in several fields around Vista and Bonsall in San Diego County.

CABBAGE

CABBAGE APHID (Brevicoryne brassicae L.)

Mississippi

R. W. Harned (March 30): Attacking cabbage and collard at Hazlehurst and Yazoo City. Determination made by A. L. Hamner.

HARLEQUIN BUG (Murgantia histrionica Hahn.)

Mississippi

R. W. Harned (March 30): The harlequin cabbage bug seems to be quite abundant in all parts of the State at the present time. Specimens have been received during the last few days from Belzoni, Collins, Peoria, and Yazoo City. Winter turnips seem to be the crop most heavily attacked at this season. A few complaints are received in regard to these insects on collards and cabbage.

POTATO

POTATO LEAFHOPPER (Empoasca fabae Harris)

Missouri

L. Haseman (March 25): Very abundant though still in their winter harbors. Observed, however, in blue grass harbors March 1-10.

STRAWBERRY

FIELD CRICKETS (Gryllus assimilis Fab.)

Mississippi

R. W. Harned (March 30): Complaints have been received recently from Laurel, Picayune, and Wiggins, in regard to serious damage caused to strawberries by crickets. (Specimens from Laurel were determined by J. M. Langston as Gryllus assimilis Fab.)

Louisiana

W. E. Hinds (March 14): Crickets are reported in several localities as injuring the fruit of strawberries where the plants have been mulched heavily during the winter.

STRAWBERRY ROOT APHID (Aphis forbesi Weed.)

Mississippi R. W. Harned (March 30): attacking strawberry at Picayune and Cleveland. Determination made by A. L. Hamner.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

North Carolina W. A. Thomas (March 21): This insect is unusually abundant at Chadbourn this season and is doing serious damage to fields of berries where no control measures have been employed. The weevils began entering the fields on March 7 and fed heavily on developing buds before beginning egg deposition on March 13. They are now generally distributed on most farms on the section. Twentyone active weevils were collected on a single plant early last week.

SOWBUGS (ONISCIDAE)

Mississippi R. W. Harned (March 30): On March 24 County Agent Jas. H. Price Pascagoula, wrote as follows: "These pill-bugs or sowbugs are literally eating up our strawberries. One lady told me this morning that she had been able to get but one strawberry for over a week. I have a few myself and it is very hard to get a berry without a hole eaten in it and most of them are from one-half to three-fourths eaten."

SLUGS (Species undetermined)

Mississippi R. W. Harned (March 30): Slugs were reported as causing damage to strawberries in Pike County, on March 14.

BEANS

FLORIDA FLOWER THRIPS (Frankliniella tritici bispinosa Morgan)

Florida J. R. Watson (March 19): The flower thrips, Frankliniella tritici bispinosa, has been severely damaging beans in the Okeechobee district.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

Florida E. F. Grossman through E. W. Berger (March 19): Though a number of weevils probably had already emerged from their natural hibernation quarters, the first weevil was trapped in the open field March 14. To date 3.88 per cent of the 28,347 weevils placed in hibernation cages at Gainesville last fall have emerged since February 28, when the first weevils to emerge were removed from the cages.



- Louisiana 7. E. Hinds (March 14): No boll weevils have emerged as yet from hibernation cages at Baton Rouge.
- Missouri L. Haseman (March 10): This pest attracted no attention on our southern cotton growing farms the past two or three seasons.
- Texas F. L. Thomas (March 21): Boll weevils were active in January in the hibernation cages. They have been feeding on cotton which is growing from last year's stalks in the Lower Rio Grande Valley. I understand that much of this cotton will be left to grow a crop this year, and as a result we are expecting much complaint from boll weevil injury.

COTTON FLEA (Psallus seriatus Reut.)

- Texas F. L. Thomas (March 15): The number of cotton flea hoppers which have emerged or hatched from each lot of 100 plants, from first emergence up to above date, inclusive, is given below.

		<u>1927</u>	<u>1926</u>
College Station	Goatweed.....	796..	26.
	Cotton.....	5.....	0
	Ragweed.....	4.....	-
	Horsenettle .....	- .....	0
Corpus Christi	Goatweed .....	16	
	Cotton .....	0	
	Horsenettle .....	1	
San Antonio	Goatweed .....	248	
	Cotton .....	1	
	Horsenettle .....	3	
	Ragweed .....	6	
Troup	Goatweed .....	2	
	Cotton .....	0	
	Ragweed .....	0	
Weslaco	Cotton .....	1	
	Ragweed .....	21	
Wharton	Horsenettle .....	16	

Date of first emergence at College Station: February 16. The much larger number of cotton flea hoppers emerging from goatweed at College Station in 1927 is not considered as especially significant at this time, but is probably a result of more favorable weather conditions for hatching of the eggs.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (March 14): With regard to the sugarcane borer hibernation, we have found during the past few weeks a very large number of full-grown larvae in the stalks of cane, corn, etc. The survival is very much heavier than it was a year ago. Pupation began in the field during the first week of February and the first moth emerging out of doors was taken in our cages March 13. This is at least a month earlier than moths became active here in 1926. This indicates a strong probability of six generations of sugarcane borers this season where we had only five in 1926.

F O R E S T   A N D   S H A D E - T R E E   I N S E C T S

MISCELLANEOUS FEEDERS

A SCALE INSECT (Lecaniodiaspis sp.)

Nebraska

M. H. Swenk (February 1): A scale insect, identified for us in November, 1926, as Lecaniodiaspis sp., probably celtidis Cockerell, by Harold Morrison of the Bureau of Entomology, has been repeatedly complained of during January, 1927, as well as during the fall of 1926, by residents of Grand Island, Hall County. Our attention was first drawn to this infestation by the Hall County agricultural agent in September, 1925. Elm, hackberry, and locust trees are the ones chiefly affected, and many of these have been killed during 1926 because of the severe attack of this scale.

PISSODES SP.

Mississippi

R. W. Harned (March 28): Complaints of serious injury to Cedrus deodora plants by insects tentatively determined as Pissodes sp. have been received during the past week from Jackson, Meridan, and Wiggins.

COTTONY CUSHION SCALE (Icerya purchasi Mask.)

Louisiana

W. E. Hinds (March 14): The cottony cushion scale has been reported from Lake Charles, Covington, and Edgard sections of the State. The eggs are now hatching and the crawlers are abundant.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

Ohio

E. W. Mendenhall (March 8): White-marked tussock moth egg masses are quite plentiful on the street trees in many of the towns and cities in the southern section of the State.

BAGWORM (Thyridopteryx ephemeriformis Haw.)

- Ohio E. W. Mendenhall (March 8): I find the bags of the bagworm very plentiful on the street trees of the cities and towns in the section of the State south of Columbus.
- Kansas J. W. McColloch (March 10): The cedars are said to be covered with the bags of this insect at Grenola.

GREENHOUSE AND ORNAMENTAL

PLANTS

MISCELLANEOUS FEEDERS

A CURCULIONID (Pachylobius picivorus Germ.)

- Mississippi R. W. Harned (March 28): Clay Lyle found ornamental conifers growing in yards at Prentiss, seriously attacked by the pine bark weevil. (Determination made by J. M. Langston.)

AN APHID (Dilachnus thujaefolia Theob.)

- Mississippi R. W. Harned (March 30): Complaints and specimens of aphids collected on arborvitae plants have been received from Grenada, Hollandale, Tupelo, and Meridian, during the last few days, all of which have been identified by A. L. Hamner as this species.

WIREWORMS (Melanotus sp.)

- Kansas J. W. McColloch (March 4): Wireworms have caused considerable damage to tomato plants in a large greenhouse at Wichita.

AN APHID (Macrosiphum rosaefolium Theob.)

- Mississippi R. W. Harned (March 30): Attacking rose at McComb and Yazoo City. Determination made by A. L. Hamner.

INSECTS ATTACKING DOMESTIC ANIMALS

HOGS

FLEAS (Siphonaptera)

- Nebraska Don B. Whelan (March 16): A farmer living at Scribner, Dodge County, reports being bothered by fleas in hog barns.

MULES AND HORSES

BUFFALO GNAT (*Simulium pecuarum* Riley)

Mississippi

R. W. Harned (February 26): We are having a serious outbreak of the buffalo gnats in parts of Mississippi. (March 28): On March 6, Dr. J. F. Barnett, a well-known veterinarian in Yazoo County, wrote as follows: "We have had the buffalo gnat here for several days. I had more calls than I could fill for two or three days until I could get the owners of stock to spray and grease the animals. They thought the animals had colic and in a few hours the animals were in such condition that I could do them no good. At first they roll and squat and act like they have colic. Some swell and at first there is a little rise in temperature, but in two or three hours the heart is affected and the pulse can not be felt. They get in a stupor or coma, run against objects, and soon fall dead. Most of the animals were dead or past doing anything for them by the time I could get to them. I was able to save quite a number where I reached them before the pulse was too weak and the temperature subnormal. I used raw linseed oil and stimulants such as carbonate of ammonia, aromatic spirits of ammonia, and camphor in whiskey. During the cold snap the gnats disappeared, but now that it is warm again they are plentiful in places. It seems that the wind carries them and they appear and disappear. Since the people are spraying and greasing no cattle are dying. Some farmers use smokers. I have been practicing here for 25 years and I believe they were worse this time than ever before. Some 50 to 75 head died in this county from gnats. Mules and horses are affected more than cattle and other animals."

Chesley Hines, Inspector for the State Plant Board with headquarters at Yazoo City, made some investigation in regard to the buffalo gnat and reported as follows: "Although the gnats were mighty bad in the delta proper, there was a greater loss of mules and horses in the locality of Eden west of Zeiglersville which is from 5 to 10 miles from the river and in the hills. In this particular locality, I have learned from reliable sources that 25 head of mules and horses died. One man in this part of the county lost seven out of the 8 mules he had. Another man living about 4 miles east of Yazoo City in the hills lost the only two mules he had. I would say that the total number of mules and horses lost in the county would be around 65 or 70."

All kinds of stock seem to be attacked by the gnat, but I have not heard of any dying except mules and horses and more mules than horses. I noticed several cows with their udders covered with blood caused from the bites of the gnats.

I have made special inquiry as to the condition of the animals that succumbed from the bites of the gnats and from all indications the healthy ones were affected as severely as the poorly cared for. The gnats attack the animals under the belly, as well as along the legs. Some few have advanced the



idea that the gnats get into the nose and ears of the animals and kill them that way, but I have been unable to find them around these parts to amount to anything. They undoubtedly poison the animals and at the same time weaken them by sucking the blood. As but few if any die after the first few days of the outbreak, it looks as though the animals may become immune to the poison to a certain extent after they get used to it."

The people are using various concoctions to keep the gnats off, either buying them prepared or making them themselves. All use some kind of a mixture of oil and tar. They use various stimulant remedies after the mules have gotten down. I was in the delta yesterday and the gnats were as thick as they were before the cold spell. I was in Madison Thursday and inquired about them. They had not noticed any there yet.

On March 28 another correspondent at Webb in Tallahatchie County wrote that the buffalo gnats were "getting bad in this section."

## INSECTS INFESTING HOUSES AND PREMISES

### TERMITES

Kansas J. W. McColloch (March 21): Reports of injury have been received as follows:

February 21. Woodwork in a dwelling at Clay Center has been honeycombed.

March 3. Severe damage is reported of the woodwork in a house and garage at Osborne.

March 11. Termite injury is reported in a public building at Lawrence.

### POWDER-POST BEETLE (Lyctus spp.)

Kansas J. W. McColloch (March 18): Severe damage to the oak flooring in a dwelling is reported at Salina.

### HOUSE FLY (Musca domestica L.)

Haiti G. F. Wolcott (March 11): House flies are extremely abundant in Cayes and have been so every time I have been there. This is in contrast with their ordinary rarity elsewhere in the West Indies. I do not know why house flies should be abundant in Cayes, although there is no question about it, especially in the bar of the International hotel.

Missouri J. W. McColloch (March 25): The first adults observed on wing outdoors on March 1 to 10 at Columbia.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi R. W. Harned (March 30): These ants are also very common in flower and vegetable gardens in this State and often viciously sting people when they are gathering flowers or vegetables. A number of complaints have been received from gardeners in regard to this species recently. (Determined by M. R. Smith.)

AN ANT (Camponotus herculeanus L. subsp. pennsylvanicus Deg.)

Mississippi R. W. Harned (March 30): Specimens of this ant have been received from Yazoo City and Merigold where they were causing trouble to property owners. No data were received to indicate whether or not the ants were infesting houses. (Determined by M. R. Smith.)

AN ANT (Camponotus caryae subsp. rasilis Wheeler)

Mississippi R. W. Harned (March 30): This ant has been received from Biloxi, Pascagoula, and Starkville, where it was found infesting houses. It normally nests outdoors in cavities in the branches of trees or in insect galls. At Starkville, the entrance to their nests was several small cracks around the window casing of a bed room. The workers have been noted in this house since last summer. At the time the house was visited, alate males and females were appearing in large numbers on the window sills. The owner stated that the ants had given no trouble around the dining room or kitchen. Specimens found in other houses in this vicinity were noted to feed on sugar and to forage most commonly in dark places. (Determination made by M. R. Smith.)

I N S E C T S I N J U R I O U S T O S T O R E D

P R O D U C T S

INDIAN-MEAL MOTH (Plodia interpunctella Hbn.)

Nebraska Don B. Whelan (March 16): A produce company in York, York County, reports much trouble with this pest getting into chick feed, corn-meal, walnuts, and cookies.

THE INSECT PEST SURVEY  
BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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THE STATE ENTOMOLOGICAL  
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## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR APRIL, 1927

The Hessian fly situation has developed no new features since our last report.

During the month serious infestations of the army cutworm have been reported from many places in Nebraska and Kansas.

The chinch bug passed the winter successfully in parts of Illinois, and despite wet weather spring mortality seems to be very low.

The true armyworm adults were observed during the first week in April in southern Illinois. This is about a week earlier than these insects appeared last year.

The corn ear worm appeared in injurious numbers in Louisiana and Texas the last week in April.

A very intense infestation by the spotted cucumber beetle attacking corn was reported from many localities from North Carolina across the cotton belt to Louisiana.

The sugarcane scale was recorded as doing a rather unusual type of damage to lawns in Florida.

Plant lice are generally more prevalent than last year on fruit trees in Massachusetts, Ohio, and Missouri.

The codling moth situation in the Middle West promises to be as serious as it was last year, a very high percentage of the larvae having come through the winter in good condition.

The eastern tent caterpillar appears to be as numerous as it was last year throughout New England in the Hudson Valley region of New York State. This insect seems to be more abundant than last year in the Middle Atlantic region, while, on the other hand, our only report from the South Atlantic States indicates a decided decrease in infestation in that region.

The plum curculio is more seriously prevalent in the Georgia peach belt than it was a year ago, and in fact than it has been since 1921. This insect was also reported as abundant and unusually early in southern Illinois.

One of the noteworthy developments of the month was the discovery of the orange maggot in the lower Rio Grande Valley. This is the first time that this serious citrus pest has been found established within the United States.

The turnip weevil has apparently spread over considerable new territory during the last year. Reports from many localities in Mississippi, Louisiana, and Alabama have been received this spring.

The seed-corn maggot has again been seriously abundant in eastern North Carolina and Mississippi.

The harlequin bug was reported as destructively abundant throughout the South Atlantic region and westward to Mississippi.

The first Mexican bean beetle of the season was found in the East Lake trucking section of Alabama on March 31, and the first eggs were found in the field on April 8. This is about two weeks earlier than this beetle was observed last year. The winter survival in hibernation cages is comparatively high.

The Chinese lily and Amaryllis are being attacked by a noctuid moth (Xanthopastis timais Cram.) in Florida.

A greater survival of the boll weevil has been reported up to April 16 in practically all of the cooperative stations this year than during 1926. Previous records indicate that about 25 per cent of the total survival emerge prior to April 16. General indications are that survival will be higher than usual in the Mississippi Valley except in the flooded districts. This is offset by the fact that in many sections the number of weevils enter hibernation was below normal. The weevil population in northern Louisiana was larger this year than any season since 1923. In the Coastal Plain region conditions are much more favorable, and present indications are that early infestation will be light. It must be understood, however, that the initial infestation is not the only limiting factor in the amount of weevil damage to be anticipated.

The cotton flea hopper has been hatching in Louisiana since early April. Indications are that in parts of Louisiana this insect may be serious. On the other hand, in the Texas cotton belt the present indications are that injury will not be so serious as last year.

This number of the Survey Bulletin contains the summary of the losses occasioned by the sugarcane borer in the years 1922-1926. The 5-year average amounts to nearly 20 per cent of a normal crop or approximately 59,000 tons of sugar. This year the borer developed 3 or 4 weeks ahead of development in 1926. The intensity of infestation seems to be higher this year than last. Throughout the lower Mississippi Valley region much damage by the sugarcane beetle is reported.

# CEREAL AND FORAGE - CROP INSECTS

## WHEAT

### HESSIAN FLY (Phytophaga destructor Say)

Illinois W. P. Flint (April 18): Observations in volunteer wheat, April 15, showed about 80 per cent of the fly in the pupal stage, and about 20 per cent still in the larval stage. No eggs were found on wheat plants in Urbana on this date.

### GREEN BUG (Toxoptera graminum Rond.)

North Carolina Z. P. Metcalf (April 25): C. H. Brannon reports that the green bug is destructive to winter rye on several farms in Alamance County.

### PLAINS FALSE WIREWORM (Eledodes opaca Say)

Kansas J. W. McColloch (April 10): The false wireworm was very prevalent in western Kansas last fall and again this spring. Owing to dry soil conditions much of the wheat did not germinate. The false wireworms worked on this seed last fall and early this spring. It is estimated that 2,000,000 acres of wheat in western Kansas will be abandoned because of dry weather and false wireworms.

### ARMY CUTWORM (Chorizagrotis auxiliaris Grote)

Nebraska Don E. Whelan (April 25): This cutworm has been reported from Chadron (Dawes Co.) where it had destroyed 200 acres of winter wheat and were still on the march. They were also reported from Grant (Perkins Co.) from Beaver City (Furnas Co.) and from Elgin (Antelope Co.).

Kansas J. W. McColloch (April 1): Injury by the army cutworm has been reported from Douns, Otis, Alton, Salina, Bloomington, Phillipsburg, and Smith Center. In most cases the damage has been to wheat but at Douns this cutworm was also attacking alfalfa.

### FIELD CRICKET (Gryllus assimilis Fab.)

South Dakota H. C. Severin (April 14): Passed the winter successfully and in large numbers in the egg state. Considerable trouble expected from this pest in western South Dakota.

## CORN

### CHINCH BUG (Blissus leucopterus Say)

Illinois W. P. Flint (April 18): An examination of chinch-bug hibernating



quarters, made on April 16, showed that considerable numbers of bugs were still present in such quarters. While the spring has been unusually wet, the adult bugs are very little affected by wet weather until after they have left the protection of their hibernating places. No serious damage from the chinch bugs is expected over the State this year.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

- Connecticut W. E. Britton (April 23): State and Federal men are now burning stalks, stubble, and weeds around each infestation in the quarantined towns of East Lynn, Waterford, New London, Groton, and Stonington. Fully as abundant as compared with an average year.
- General Monthly Letter of the Bureau of Entomology (March 1927): Shipments from Europe to the United States of parasites and parasitized larvae of Pyrausta nubilalis are steadily being made. For the present fiscal year to date shipments have been made as follows: Eulimneria crassifemur, 20,334; Aggitia punctoria, 11,209; Phaenogenes planifrons, 17,017; Microgaster tibialis, 127,680; Mesochorus spp., 1,652; parasitized larvae bearing various percentages of other species, 1,242,000.

ARMYWORM (Girphis unipuncta Haw.)

- Illinois W. P. Flint (April 18): Adults of the armyworm were taken during the week of April 4 in southern Illinois, and the next week in small numbers at bait traps in central Illinois. Observations thus far do not indicate that the moths are present in more than normal numbers.

CORN EAR WORM (Heliothis obsoleta Fab.)

- Louisiana W. E. Hinds (April 25): The corn ear worm is developing abundantly in early planted fields of corn. It has proven to be more injurious than usual in its attack on sweet peas and other early spring host plants.
- Texas E. L. Thomas (April 25): The corn ear worm is causing injury in some corn fields near Robstown.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

- Louisiana T. E. Holloway and W. E. Haley (April 12): The fall armyworm was found injuring young corn at Cutoff, La.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

- North Carolina J. N. Tenhet (April 21): Slight damage common; one field of about 10 acres three-fourths destroyed. Field being replanted. Damage negligible on high ground, 100 per cent destruction on low bottom land at Chadbourn.



- Alabama J. M. Robinson (April 6): The southern corn root worm is present in large numbers at Auburn and is already attacking corn that has been planted in various portions of the State.
- Louisiana J. W. Ingram (April 5): Southern corn root worms were found to have killed about 5 per cent of the corn plants in a field near Lacassine.

CORN ROOT APHID (Anuraphis maidi-radicis Forbes)

- Missouri A. C. Burrill (April 7): First wingless female seen on walk on afternoon of March 15, 1927, and first winged female seen at noon March 16, as the first little plum tree began to bloom.

ALFALFA

PEA APHID (Illinoia pisi Kalt.)

- Kansas J. W. McColloch (April 15): The pea aphid has been reported injuring alfalfa at Anthony, Sharon, Great Bend, and Hutchinson.

CLOVER

GREEN CLOVER WORM (Plathypena scabra Fab.)

- Alabama C. A. Walker (February 24): Reported from Anniston.

CLOVER HEAD WEEVIL (Phytonomus meles Fab.)

- New York E. P. Felt (April 25): Clover weevils, Phytonomus meles, were somewhat numerous in the air on April 20.

CLOVER BUD WORM (Phytonomus nigrirostris Fab.)

- New York E. P. Felt (April 25): Phytonomus nigrirostris was somewhat numerous in the air on April 20.

A LOOPER(Drasteria crassiuscula Haw.)

- New York E. P. Felt (April 22): First adults taken by Roy Latham at Orient, April 15.

GRASS AND LAWNS

ANOMALA (Anomala orientalis Waterh.)

- Connecticut R. B. Friend (April 23): The hibernating larvae have begun to come up to the surface of the soil in sheltered places at New Haven.

SUGARCANE SCALE (Targionia sacchari Ckll.)

Florida

M. D. Leonard (March 23): In making the determination of this scale for me Mr. Merrill writes: "This is the first time we have received this scale on a grass. However, Mr. Sasscer has written that this scale was found on centipede grass at Coconut Grove, as well as at the Plant Introduction garden at Savannah, Ga." This scale was doing considerable damage to the lawn on a large estate, big patches of grass having been killed out at Palm Beach.

FRUIT INSECTS

APPLE

APHIDAE

Massachusetts

A. I. Bourne (April 23): Because of the warm weather which we had about the middle of March, apple plant lice were observed by the 10th or 12th of April; By the 15th of the month the apple buds were opening into the delayed dormant condition, and the sudden appearance of warm weather on the 15th brought plant lice out in large numbers. Reports indicate the apple plant lice are much more abundant this year than last year and are about what we experience in a normal season.

Connecticut

Philip Garman (April 23): Not abundant, but relatively scarce according to the observations of E. M. Stoddard of this station. Attacking apple. Apparently not so numerous as last year.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

Ohio

E. W. Mendenhall (April 20): Oct. aphids are making their appearance this spring in usual amount throughout the State. Rather hard to control.

Missouri

A. C. Burrill (April 4): Swarming in buds of neglected orchard. Have not yet proved them general and do not know at this time if they will reach epidemic proportions.

APPLE APHID (Aphis pomi DeG.)

Massachusetts

A. I. Bourne (April 23): Mr. Whitcomb reports in Middlesex County that Aphis pomi DeG. was found in moderate numbers on the 6th of April. A still earlier report from Middlesex County records the finding of one or two specimens of this species as early as April 1.

- Ohio E. W. Mendenhall (April 20): The appearance of the apple aphid shows about the usual infestation on apple even where the regular spray program is carried on.
- Oregon Don C. Mote (April 9): First adults observed by B. G. Thompson, March 28. On April 4 he reported a 20 per cent hatch.

CODLING MOTH (Carpocapsa pomonella L.)

- Illinois W. P. Flint (April 18): First pupation of overwintering larvae of the codling moth was observed in southern Illinois on April 6. No pupation has been observed in the central part of the State. The overwintering larvae of the codling moth are fully as abundant as in the spring of 1926, a very high percentage of the worms having come through the winter alive. The present prolonged rainy period is likely to prevent the application of the calyx spray in many southern and south-central Illinois orchards where the apples are already out of the bloom.
- Kentucky H. Garman (April 14): The adult codling moth is emerging, and some mischief is expected from it in the apple-growing sections about Henderson where there is some probability that it will continue numerous this season.
- Oregon Don C. Mote (April 9): First pupae found by B. G. Thompson on April 7, at Corvallis.

BUD MOTH (Imetocera ocellana Schiff.)

- Massachusetts A. I. Bourne (April 25): Mr. Whitcomb, of the Market Garden Field Station at Waltham, Middlesex County, reports as follows: Apple bud moth, larvae active in buds which are at prepink stage. Normal in abundance.

STRAWBERRY TIGER MOTH (Haploa colona reversa Stretch)

- Kentucky H. Garman (April 14): This bud worm of apple, treated in our circular No. 25, 1921, is abundant on apple trees near Fordville, in Ohio County, and is now about three-fourths grown.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

- Massachusetts A. I. Bourne (April 23): Because of the considerable amount of warm weather which we had for a week or two about the middle of March, we noted some appearance of tent caterpillars by the 10th or 12th of April. By the 15th of the month the apple buds were opening into the delayed-dormant condition



and the sudden appearance of warm weather on the 15th and thereafter brought tent caterpillars out in large numbers. It is still too early to make any accurate estimate of the relative abundance of the tent caterpillars, but from all indications at hand they are fully as numerous as last year. From counts which we have already made of several thousand eggs of this insect, we find that the highest percentage of parasitism is only about 10 per cent and that the average is about 6, so that there does not appear to be a very great increase in the amount of parasitism over last year.

- Connecticut W. E. Britton (April 23): Small nests are now conspicuous everywhere on apple and wild cherry. Campaigns for the destruction of egg clusters by boys and girls were conducted in several towns.
- New York E. P. Felt (April 22): Apparently abundant in the Hudson Valley, hatching being recorded at Mt. Vernon (G. M. Coddington) April 15; at Blauvelt, Orange County (P. L. Huested) April 16; at Rochester (R. E. Horsey), April 21; and at Nassau, Rensselaer County, April 22.
- E. P. Felt (April 23): First hatching of apple tent caterpillar observed at Rye, April 14. There seemed to be fewer egg masses locally as a result of systematic collecting by school children (Henry Bird). The first hatched caterpillars were observed at Orient, L. I. April 21 (Roy Latham).
- North Carolina Z. P. Metcalf (April 25): The apple tent caterpillar, which was very abundant and widespread last spring, is rather conspicuous by its absence this spring.

#### TARNISHED PLANT BUG (Lygus pratensis L.)

- North Carolina Z. P. Metcalf (April 25): Reports show that the tarnished plant bug has seriously damaged developing fruit buds of the apple in Macon County.
- Kansas J. M. McColloch (April 14): Adults of this bug are very abundant on buds of apple blossoms. They have injured many buds to such an extent that they will not bloom.

#### APPLE LEAFHOPPER (Empoasca mali LeB.)

- Ohio E. W. Mendenhall (April 20): The apple leafhopper is present again this spring in the usual proportions and this one is very hard to control and seems to do most damage to apple and grape.

#### SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

- Connecticut Philip Garman (April 23): There is no problem in scale control



in Connecticut today. The pest is hard to find in most orchards.

New York E. P. Felt (April 22): More abundant than usual at Rochester, being found on Japanese quince, mountain ash, crab apple, Japanese cherry, and ornamental plum (R.E.Horsey).

Illinois W.P.Flint (April 18): Examinations of overwintering San Jose scales show that from 15 to 30 per cent of the scales survive the winter. These figures hold for central and south-central Illinois. No examinations were made in the northern part of the State.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

North Carolina Z.P.Metcalf (April 25): C. H. Brannon reports that the oyster-shell scale is doing considerable damage to apple orchards in Surrey County.

SCURFY SCALE (Chionaspis furfura Fitch)

South Dakota H. C. Severin (April 14): The winter was passed successfully. Ordinarily this scale is not so abundant or harmful as the oyster-shell scale.

North Carolina Z.P.Metcalf (April 25): C. H. Brannon reports that the scurfy scale is doing considerable damage to apple orchards in Surrey County. It is found abundantly on black gum near the orchards, thus furnishing a continuous supply for reinfestation.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Illinois W.P.Flint (April 18): The apple flea weevil has been reported as present in unusual numbers in western Illinois orchards.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Connecticut Philip Garman (April 23): Present in nearly all orchards in New Haven County, but not especially abundant in any.

PEAR

PEAR PSYLLA (Psyllia pyri L.)

Massachusetts A. I. Bourne (April 23): We have noted the first appearance of eggs of the pear psylla on the 15th and 16th of April at the College. (April 25): Mr. Whitcomb (Middlesex County) reports as follows: Adults very active and abundant on trees examined. Majority of eggs laid and present in large numbers. Most varieties of pears in cluster-bud stage ready for psylla egg spray.

AN ANOMALA (Anomala undulata Melsh.)

Mississippi

R. W. Harned (April 25): A lot of these beetles were received from Agricola where they were found on February 26. The correspondent who collected them stated that they appeared just at dusk in large numbers and attacked pear and fig trees. Very few were present the next morning, although a few were noticed the second night. They were only noticed in large numbers on one night. Our correspondent states: "The peculiar thing about them was that they collected on a few trees only that had just been set out and did not harm trees that had been set the previous year that were growing nearby. The leaves of the newly set trees were wilted and that might have attracted the beetles."

PEACH

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

Georgia

Messrs. Snapp and Swingle (April 6): The first moth emerged on February 24. Moth emergence last year did not start until March 28. The first twig injury by this insect's larvae was noted this year on April 2. (April 20): Twig injury from first-generation larvae has been noticed since April 2. First full grown larva of first brood noted April 12.

Alabama

H. P. Harris (February 11): Reported from Anniston.

TARNISHED PLANT BUG (Lygus pratensis L.)

Illinois

S. C. Chandler (April 13): Tarnished plant bugs are much more numerous this year in southern Illinois than in 1926. The first injury to peach by these insects was observed on this date.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia

O. I. Snapp (April 6): The San Jose scale is apparently under good control in most orchards. Three per cent lubricating-oil emulsion was used on at least three-fourths of the acreage that was sprayed last winter for this pest. Liquid lime-sulphur was used in most other cases. (April 20): Many crawlers observed today.

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Georgia

O. I. Snapp (April 18): This insect appeared this year a little earlier than usual. It is now attacking young peach trees in Fort Valley.

THRIPS (Thysanoptera)

Illinois S. C. Chandler (April 13): Thrips were first observed in peach blossoms on April 13 in Johnson County. These insects were much more numerous than in 1926.

GREEN PEACH APHID (Myzus persicae Sulz.)

Georgia O. I. Snapp (April 7): Several colonies were found today on peach limbs. This insect is not common in the Georgia Peach Belt.

PEACH BORER (Aegeria exitiosa Say)

Kentucky H. Garman (April 14): The peach tree borer is becoming active and, in some cases, is nearly ready for pupation although others are considerably smaller.

LESSER PEACH BORER (Sesia pictipes G. & R.)

Georgia O. I. Snapp (April 6): This insect is apparently more abundant than normal in Fort Valley, and in some orchards is causing considerable injury, particularly those that have been somewhat neglected.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Georgia O. I. Snapp (April 6): The first curculio eggs were observed in Fort Valley on March 25. Larvae a week or ten days old were found in the orchards on April 5. The infestation is apparently heavier than it was a year ago. Growers are now making the second application of spray or dust for the control of this insect. Larvae were not found in the orchards last year until April 21. (April 20): Apparently the curculio infestation is heavier in the Georgia Peach Belt this year than it has been since 1921. Matured larvae are now leaving the drops in numbers; 3,217 larvae have already been taken from 5 bushels of drops collected on April 11. Over 1,400 came out in one day. Growers have started late to enforce control measures. More or less curculio damage to the Georgia peach crop this year is anticipated.

Illinois S. C. Chandler (April 6): The plum curculio was taken in abundance in southern Illinois on April 6, which is a little earlier than usual with respect to the development of the peach, and 21 days earlier by the calendar than in 1926. Cool rainy weather has prevented much activity on the part of the curculio.

GRAPE

APHIDAE

Florida J. R. Watson (April 8): Aphids are quite numerous on grapevines



near Gainesville, but perhaps no more so than usual at this time of the year.

## CITRUS AND SUBTROPICAL FRUITS

### SPIRAEA APHID (Aphis spiraeicola Patch)

Florida J. R. Watson (April 8): The new citrus aphid is increasing in number and a large proportion of the winged forms have been produced; however, oranges are too far along in their growth to be much injured by them with the exception of young trees which were severely hurt by frost last winter. Tangerines are suffering some.

### ORANGE MAGGOT (Anastrepha ludens Loew.)

Texas F. L. Thomas (April 25): A new pest, the orange maggot, Anastrepha ludens, has been reared from grapefruit grown in the Lower Rio Grande Valley. The determination has just been verified by Prof. J. M. Aldrich of the Museum.

### SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Mississippi R. W. Harned (April 25): On April 19 Mr. P. K. Harrison, stationed at Picayune, sent in an interesting note in regard to a heavy infestation of Diabrotica duodecimpunctata. This was accompanied by a number of the beetles that were collected from Satsuma orange and pear trees on the property of the Ozona Orchard Company in Pearl River County. The Superintendent reports that "Immediately previous to the unusual heavy rain and gale from about 8:30 A.M. on April 15 to 6:00 A.M. on April 16, I have never seen as heavy an infestation of Diabrotica duodecimpunctata." Harrison reports that the damage to the trees can easily be detected before one gets near to them, the leaves in many cases being almost entirely eaten. Only about 100 acres of the Satsuma orchard and all of the 20 acres of the pear orchard were infested. A large amount of damage was done to the blossoms and young fruit of the Satsumas. On April 19 there were not many beetles at work, but a few were collected and sent to this office.

## TRUCK - CROP INSECTS

### MISCELLANEOUS FEEDERS

### WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.) active

Oregon Don C. Mote (April 9): The first adults of the twelve spotted leaf beetle, Diabrotica soror, were observed on March 27 at Corvallis.



TURNIP WEEVIL (Listroderes obliquus Gyll.)

- Mississippi R. W. Harned (April 25): Specimens of the Australian turnip or tomato weevil, were received from Natchez on March 30, where they were reported as causing serious damage to turnips. Specimens were also received from Gloster on April 2, where they were reported as injuring cabbage and tomato plants. Still another complaint in regard to serious damage caused by these insects to tomato plants was received on April 23 from Lincoln County.
- Louisiana W. E. Hinds (April 25): The Australian tomato weevil has apparently increased its area of infestation and has now reached the adult stage in its development. These adults do extensive feeding damage on many crops before they deposit their eggs and disappear for the balance of the season. It seems that these weevils are attracted somewhat to lights, and may be quite active fliers.
- Alabama A. Boyles (March 17): Reported from Mobile as attacking cabbage.
- J. M. Robinson (April 16): The Australian tomato weevil has been reported attacking cabbage as well as turnips in Mobile County.

A MOLE CRICKET (Gryllotalpa sp.)

- Alabama J. A. Pettis (March 9): Reported from Winn as attacking plants and vegetables.
- Texas F. L. Thomas (April 25): Mole crickets are doing damage in Liberty and Brazoria Counties.

APHIDIIDAE

- Alabama J. M. Robinson (April 6): There are many species of aphids attacking crops, from the various garden vegetables to roses, chrysanthemums, and pecan trees at Auburn.

SOWBUGS (Oniscidae)

- Mississippi K. L. Cockerham (April 16): Since February these sowbugs or pillbugs have been very numerous in and around Biloxi. At times one can get out in the vegetation around flower beds and near vegetable patches and literally pick them up by the handfuls. Along the coast these bugs appear as a pest practically every spring and they threaten to become serious to certain crops.
- R. W. Harned (April 25): Quite a few complaints have been

received in regard to damage caused by pillbugs to strawberries this spring. Specimens were received from two properties at Pascagoula on April 5, where they were reported as causing damage to strawberries. A serious complaint in regard to damage by these creatures to lilies was reported from Meridian on March 30. The correspondent writes: "I am having considerable trouble with a bug that is cutting my flowers down. They cut them off near the ground very much like cutworms except a little higher from the ground. They have destroyed a number of bunches of Easter lilies that would soon have been in bloom."

A correspondent from Okla. sent us specimens of pillbugs on April 11 with the statement that they were causing serious damage to her petunias, snap-dragons, and other flowers.

#### FLEA BEETLES (Halticinae)

Mississippi R. W. Harned (April 25): During the past few weeks quite a number of complaints have been received in regard to flea-beetles, both larvae and adults. Specimens of the larvae that were reported as causing damage to turnips and mustard were received from Fenwick on April 1, from Natchez on March 30, from Grenada on April 16, and from Como on April 12. We also received one complaint accompanied by specimens from Cuevas in regard to flea-beetle larvae causing damage to strawberries.

#### A WHITE GRUB (Phyllophaga arcuata Sm.)

Alabama B. L. Allen (February 3): Reported from Newbern attacking garden plants.

#### SPOTTED CUTWORM (Agrotis c-nigrum L.)

Massachusetts A. I. Bourne (April 25): Mr. Whitcomb has just sent in a report on the spotted cutworm as follows: "Nearly full grown larvae numerous and active. They are now feeding on chickweed, clover, and shepherd's purse, but promise to attack severely any garden plants which are sprouted or transplanted in the next two weeks."

#### CUTWORMS (Noctuidae)

Florida F. M. McIntyre Jr. (February 14): Reported from West Palm Beach attacking peanuts and other plants.

Texas F. C. Bishopp (April 23): Cutworms have been unusually destructive in various parts of Texas during the early spring. Field crops as well as garden stuff have been damaged considerably, and much poisoning has been done against them.

#### POTATO

#### LEAF-FOOTED BUG (Leptoglossus phyllopus L.)

Mississippi K. L. Cockerham (April 7): On this date at Carriere, Pearl River

County, these plant bugs were puncturing and sucking leaves, petioles, and stems in an 18-acre field of potatoes. In walking across the field I could occasionally see a wilted top of a plant.

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

- New York E. P. Felt (April 23): The first adult was observed flying at Orient, L. I. April 20 (Roy Latham).
- Alabama J. M. Robinson (April 6): The Colorado potato beetle is quite active over the State.
- Louisiana W. E. Hinds (April 25): Colorado potato beetles have been reported as seriously abundant in only a few localities. The major part of the early potato crop of this State is produced without any necessity for poisoning these beetles.

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

- North Carolina W. J. Reid Jr. (April 6): A heavy infestation of the seed-corn maggot was found in the potato seed planted in the vicinity of Pantega and Beaufort. The maggot injury was associated with a rather severe decay of the seed pieces in that particular section. At the time of the examination, the great majority of the larvae had left the seed and had pupated.

Z. P. Metcalf (April 25): The seed-corn maggot has been especially destructive in the State this spring. It seriously damaged young tomato plants in cold frames in Rowan County, beans in Henderson County, and Irish potatoes in Washington County.

- Mississippi R. W. Harned (April 25): Serious damage to onion sets by Hylemyia cilicrura was reported from Louise on March 31.

POTATO APHID (Illinoia polanifolia Ashm.)

- Florida J. R. Watson (April 8): The tomatoes on the lower east coast of Florida about Miami are being severely attacked by this aphid.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

- New York E. P. Felt (April 22): The first cabbage butterfly was observed at Orient, L. I. (Roy Latham) March 14, it becoming abundant April 15, a hundred or more being seen that day. (April 23): The first cabbage butterfly was observed at Rye, April 15 (Henry Bird).
- Kentucky H. Garman (April 14): The imported cabbage butterfly has been



observed frequently for two weeks past, but there is no crop in the fields at present on which it can do serious mischief.

Oregon Don C. Mote (April 9): Adults observed by J. Wilcox, March 27.

HARLEQUIN BUG (Murgantia histrionica Hahn)

North Carolina Z. P. Metcalf (April 25): The harlequin bug was very destructive last summer and is continuing its destructive work in many localities in the State this spring.

Georgia O. I. Snapp (March 21): A number of reports of this insect injuring young cabbage plants have come to the laboratory during the last several weeks.

Alabama Albert P. Segers (February 28): Reported from Vocation attacking cabbage.

A. L. Dees (March 30): Reported from Mt. Meigs attacking garden plants.

J. M. Robinsen (April 6): The harlequin cabbage bug has been very abundant and active over the State.

L. W. Brannon (April 15): The harlequin bug has been doing considerable damage to cabbage, mustard, and turnips this spring and specimens have been seen active in the field since the middle of March. Egg masses of this insect are fairly numerous now. This insect was very bad last fall in this district (Birmingham) and will no doubt be of considerable economic importance this season.

Mississippi R. W. Harned (April 25): The harlequin bug has been reported as causing serious damage to cabbage, collards, mustard, turnips, and other crops at many places throughout the State. From most places this insect is reported more abundant than it has been for several years. Eggs have been deposited in large numbers throughout April. From West Point in Clay County, however, the harlequin bugs are reported as being less abundant than they were last year.

STRAWBERRY FLEA BEETLE (Haltica litigata Fall)

Alabama Aubrey Boyles (March 17): Reported from Mobile attacking cabbage.

STRAWBERRY

STRAWBERRY ROOT WORM (Paria canella Fab.)

North Carolina W. A. Thomas (April 11): This insect has entered the strawberry fields from adjacent woods and in a few places is almost completely defoliating the plants. So far, no egg laying has been observed.



METALLIC STRAWBERRY ROOT BORER (Graphops pubescens Melsh.)

New York E. P. Felt (April 25): Graphops pubescens was somewhat common.

STRAWBERRY ROOT APHID (Aphis forbesi Weed)

North Carolina W. A. Thomas (April 4): This aphid appears to be much more abundant than at the same date last season. The infestation has already spread from the roots to the stems and developing leaves just above the surface of the ground. Attendant ants are much in evidence about the infested plants. The infestation seems to be more general this season than usual. Practically every farm observed so far shows this insect present. The present aphid infestation may presage serious injury this coming fall.

A MILLIPEDE (Cambala annulata Say)

Kentucky H. Garman (April 14): I have recently received a communication from western Kentucky stating that a worm, of which samples were submitted, is doing a great deal of injury to strawberry plants. It proves to be the millipede Cambala annulata.

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

Oregon Don C. Mote (April 9): Overwintering strawberry weevils, Brachyrhinus ovatus, appear to be much less numerous this year than last year. In a strawberry patch of 2.5 acres in which they were reported as being numerous last spring, only 45 weevils were found in an examination of 135 plants.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Arkansas W. J. Baerg (April 12): About one-third of the blossoms are out, and in but one field out of six was any weevil injury observed. This is in our typical "weevil territory." It seems there will be only a small trace of injury by the weevil this year.

RED SPIDER (Tetranychus telarius L.)

Mississippi R. W. Harned (April 25): Red spiders have been reported as causing considerable damage in different sections, especially from the southern half of the State. They have been reported on strawberries in three fields near Meridian on April 13, on water oak at Natchez on April 14, on camellia japonica at Hattiesburg on April 14, and on sweet pea and hollyhock at Brookhaven on April 21.

GARDEN SLUG (Agriolimax agrestis L.)

Louisiana W. E. Hinds (April 25): The brown garden slug, which occurs

abundantly in grass ground, has been reported as injuring severely the fruit of the strawberry in areas where the ground is heavily mulched with pine straw, and also injuring lettuce in gardens particularly where the garden is kept well sprayed.

### ASPARAGUS

#### W-MARKED CUTWORM (*Agrotis unicolor* Walk.)

Illinois W. P. Flint (-April 18): W-marked cutworms have been observed injuring asparagus. Most of the injury is occasioned by small holes eaten in the growing tip of the asparagus shoots. Two per cent injury was observed in one patch, which would mean a much higher percentage of injury for a total crop of the season.

### BEANS

#### MEXICAN BEAN BEETLE (*Epilachna corrupta* Muls.)

Alabama L. W. Brannon (April 15): The first Mexican bean beetle of the season was found feeding on bean leaves in the East Lake trucking section on March 31. The first egg mass was found in the field on April 8. During the 1926 season the first bean beetle was found active in the field on April 12, which is about two weeks later than this season. Up to this date, the results of the emergence of beetles from the hibernation cage indicate that the survival will be high since 11.3 per cent have emerged.

#### BEAN LEAF BEETLE (*Cerotoma trifurcata* Forst.)

Alabama L. W. Brannon (April 15): Adults of this species are doing considerable damage to young beans in the Birmingham district. They are appearing in larger numbers than at the beginning of last season.

#### GARDEN SLUG (*Agriolimax agrestis* L.)

Mississippi R. W. Harned (April 25): Slugs were reported as injuring bean plants in Amite County on March 29, (Specimens identified by the Division of Mollusks of the National Museum.)

### PEAS

#### PEA APHID (*Illinoia pisi* Kalt.)?

Arizona Arizona News Letter (Vol. 5, No. 2, February 28, 1927): The large green pea aphid has been found in many of the fields of winter peas. This insect caused some damage during the spring of 1926, and the present outlook is not encouraging. Many of the growers have been using the nicotine dust preparations in

an attempt to check the pest, while several others have used the liquid sprays. The tobacco sprays are being used.

SWEET POTATO

COFFEE-BEAN WEEVIL (Araecerus fasciculatus DeG.)

Alabama

Troy Thompson (April 7): These insects were found feeding on sound potatoes in a storage bank about 6 miles north of Grand Bay in Mobile County. Extensive feeding signs were noted over a good portion of the potatoes in this bank. In 1926 we found a similar occurrence in Baldwin County near Foley. These insects usually attack dried products.

CARROT AND PARSNIP

CARROT RUST FLY (Psila rosae Fab.)

Connecticut W. E. Britton (April 23): Injured parsnips received from Winsted, March 23, contained larvae. I also found them in my own garden, at New Haven. These insects have not been observed before.

# SOUTHERN FIELD - CROP INSECTS

## COTTON

### BOLL WEEVIL (Anthonomus grandis Boh.)

B. R. Coad (Cooperative Report March 16): The percentage of weevils which had emerged to this date is as follows:

Station	Per cent of number put into cages that emerged prior to March 16.		
	1925	1926	1927
College Station, Tex.....	0.38	0.98	1.36
Florence, S. C.....	1.22	.01	.65
Aberdeen, N. C.....	.19	0	.58
A. & M. College, Miss.....		0	.21
Auburn, Ala.....	0	0	.11
Tallulah, La.....	.003	.002	.06
Rocky Mount, N. C.....	0	0	.05
Stoneville, Miss.....		0	.02
Baton Rouge, La.....	.34	.26	0
Experiment, Ga.....	.43	0	0
Holly Springs, Miss.....	0	0	0
Raymond, Miss.....		0	0
Poplarville, Miss.....		0	0
Fayetteville, Ark.....			0

No general conclusions can be drawn from these very early records. It will be noted that weevil emergence was reported from 8 of the cooperating stations; in each case, the emergence was greater than last year. Only one station reported a greater emergence in 1926 than this year.

B. R. Coad (Cooperative Report April 1): The following table gives the percentage of weevils that had emerged prior to April 1 at the several cooperating stations, also comparative figures for the same date in 1925-1926. It will be noted in this table that weevil emergence was somewhat greater this year prior to April 1 than in 1926, at eight points, and somewhat less than last year at four points. It is too early to predict the final emergence, but it is now obvious that the percentage of survival will probably be greater this year than in 1926 at many points.



## Station

Per cent of number put  
into cages that emerged  
prior to April 1.

	1925	:	1926	:	1927	:
Raymond, Miss.....			0	:	.65	
College Station, Tex.....	1.96	:	2.45	:	2.28	:
Florence, S. C.....	1.80	:	.04	:	1.51	:
Aberdeen, N. C.....	.19	:	0	:	1.15	:
A. & M. College, Miss.....		:	0	:	.36	:
Auburn, Ala.....	0	:	0	:	.13	:
Rocky Mount, N. C.....	.05	:	.02	:	.16	:
Tallulah, La.....	.01	:	.02	:	.12	:
Stoneville, Miss.....		:	0	:	.10	:
Experiment, Ga.....	.40	:	.02	:	0	:
Baton Rouge, La.....	1.64	:	.80	:	0	:
Holly Springs, Miss.....	0	:	0	:	0	:
Poplarville, Miss.....		:	.05	:	0	:
Fayetteville, Ark.....		:		:	0	:

Boll Weevil Prospects for 1927 (April 4): Temperatures throughout the Cotton Belt have been unusually mild during the past winter, and undoubtedly as a consequence survival among those weevils actually in hibernation will be higher than usual. This is offset by the fact that in many sections last summer and fall conditions were such that the number of weevils entering hibernation was much lower than usual. Consequently, spring infestations are going to depend to an unusual degree upon conditions last fall in each locality. Wherever weevils were abundant last fall the spring emergence will be heavy. This season's examinations were distributed throughout Louisiana from the south to the north at approximately the same points that were included in 1926 and a fairly representative average condition is reported. It is obvious that in northern Louisiana the weevil population is larger this year than at any time since 1923 and smaller in southern Louisiana than last year. "Spotted" conditions as regards density of infestation may again be expected.

The points in South Carolina where examinations were made are representative of conditions in the coastal plain section of that State. It is obvious that the initial infestation in that section will be light this season. The weevil crop was comparatively light last fall because of a low survival last spring and unfavorable weather conditions for weevil development during the cotton-growing season. In northern Alabama, northern Georgia, South Carolina, and North Carolina, generally speaking, climatic conditions last year effected almost complete weevil control, slight injury being reported in only a few restricted localities in this entire area. A generally light initial infestation may be expected throughout this area but there are many points where local conditions favored weevil multiplication last fall and these points may expect heavier infestation. Hibernation

cage records in South Carolina show that the percentage of survival of weevils actually entering hibernation will be high.

To summarize, the Mississippi Valley territory may expect a somewhat heavier initial infestation than was experienced in 1926, the infestation decidedly decreasing to the eastward. However, in the eastern areas sufficient weevils will be present to cause serious damage provided weather conditions during the cotton-growing season are favorable for weevil development. In Texas, especially in the central portion, the weevil population was decidedly increased by favorable weather conditions during the latter part of the growing season of 1926 and a somewhat heavier initial infestation is expected this season than for several years.

As has been pointed out in reports in past years, these records are only an indication of the initial infestation that may be expected; the final factor that will determine weevil damage is summer weather conditions. In large sections of the Cotton Belt a normal infestation and in some cases more than normal will be likely to occur and with conditions favorable to the weevil serious damage may be expected.

Louisiana

W. E. Hinds (April 25): No boll weevils have emerged from among about 900 placed in hibernation cages October 8 and 24, 1926. Killing frosts occurred about November 24, and it is evident that the interval was sufficient to accomplish practically complete starvation of weevils before it became cold enough for them to hibernate. This indicates also that where cotton fields were cleaned up thoroughly by the middle of October, 1926, there would have been no survival of weevils therein.

Texas

T. C. Barber (April 12): At Brownsville, in a field of volunteer cotton this morning, I found a heavy weevil infestation, all stages from egg to newly-emerged adults being plentifully present. While fruiting of the cotton plants was light, the squares showed about 90 per cent infestation, and numerous fallen squares could be found on the ground containing immature weevil stages. This is the first place this season where I have found more than a trace of weevil infestation in this locality.

THRIPS (Thysanoptera)

Texas

F. L. Thomas (April 25): Thrips were very abundant on cotton several weeks ago but have now disappeared.

COTTON FLEA (Psallus seriatus Reut.)

Louisiana

W. E. Hinds (April 25): The cotton flea hoppers' overwintered eggs have been hatching for several weeks, and we anticipate the abundant occurrence of this species this season. It is likely that its injury to cotton may be fully as widespread as it was in 1926.

Texas F. L. Thomas (April 25): Practically no flea hopper infestation in the Lower Rio Grande Valley and very little around Corpus Christi.

Texas F. L. Thomas (April 16): Since April 1, the number of cotton flea hoppers hatching from the overwintering eggs has greatly decreased and apparently the spring emergence of this insect is practically completed. In this section of the State adult cotton flea hoppers are now common in the field and egg-laying is well under way in weeds, especially in evening primrose.

A brief survey of several cotton fields in the Rio Grande Valley on April 14 the 15 showed practically no infestation of the cotton flea hopper. At present it appears that the injury by this insect will not be as great as it was last year, although localized infestations will likely occur in fields where the spring weed food plants are not destroyed.

#### TOBACCO

##### GARDEN SPRINGTAIL (*Sminthurus hortensis* Fitch)

Connecticut W. E. Britton (April 20): Large numbers of springtails feeding on young plants in seed beds. Frequently troublesome in preceding years. Reported from Hockanma, East Hartford.

#### GRASSHOPPERS (*Acridiidae*)

Florida F. S. Chamberlin (April 5): Newly set tobacco plants are being infested with young hoppers which are unusually abundant for this season in Gadsden County.

##### POTATO TUBER WORM (*Phthorimaea operculella*, Zell.)

Florida F. S. Chamberlin (April 25): Splitworms are more abundant in Gadsden County than usual this spring. The larvae frequently work into the buds of small tobacco plants, causing considerable injury.

#### RICE

##### SUGARCANE BEETLE (*Etheola rugicollis* Lec.)

Louisiana J. W. Ingram (April 21): The sugarcane beetle has been found injuring rice in all unflooded fields examined during the month. In no field in the vicinity of Crowley has the damage amounted to as much as 1 per cent of the stand of rice. A letter was recently received from Sulphur, stating that the rice near the Texas line was "suffering severely" from this beetle gnawing the unflooded plants beneath the surface of the soil.



SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

T. E. Holloway and W. E. Haley (April 11): Larvae of the first instar of the sugarcane moth borer, Diatraea saccharalis crambidoides, were found in some abundance at Raceland and Houma. A few larger larvae were also found.

Lionel L. Janes, T. E. Holloway, and W. E. Haley (April 19): During the season of 1926 a loss of 16 per cent of a normal crop, or 38,352 tons of sugar, is estimated. No account is taken of the damage caused to cane used for sirup or damage to planted seed cane.

The following table shows the estimated loss occasioned by this insect for the series of years 1922-1926 and also the five-year average.

Year	: Acreage in cane	: Loss caused by	: Loss caused	: Loss caused
:	: used only for	: sugarcane moth	: by sugarcane	: by sugarcane
:	: sugar	: borer in per	: moth borer	: cane borer
:	:	: cent of a nor-	: in short	: in pounds
:	:	: mal crop.	: tons of	: of sugar.
:	:	:	: sugar.	:
:	:	:	:	:
1922	: 241,433	: 17	: 61,565	: 123,130,83
1923	: 217,259	: 23	: 74,959	: 149,908,71
1924	: 162,640	: 13	: 13,715	: 63,429,60
1925	: 190,248	: 30	: 85,612	: 171,223,20
1926	: 159,800	: 16	: 38,352	: 76,704,00
5-year				
average	194,276	: 19.8	: 58,990	: 116,879,26

W. E. Hinds (April 25): Sugarcane borer development through the first generation is abundant and three or four weeks ahead of the same stage in 1926. The growth of corn has been unusually slow in comparison with the growth of cane this season. Therefore the infestation of borers is less distinctly concentrated in corn but is much more apparent in the more thrifty growing plats of cane, particularly in some of the new varieties.

SUGARCANE BEETLE (Euethoea rugiceps Lec.)

Louisiana

W. E. Hinds (April 25): The rough-headed corn stalk beetle, Euethoea rugiceps, is reported in many localities and is doing serious damage to stands of sugarcane, corn, rice, and other crops. Apparently they do not attack soy beans as these are left unharmed where planted with corn which is destroyed.



Mississippi

R. W. Hanned (April 25): Quite a few complaints have been received during the past few weeks in regard to the rough-headed cornstalk beetle or sugarcane beetle, Euethola rugiceps, most of which have come from the southwestern part of the State. Complaints accompanied by specimens in regard to injury caused to young corn and sugarcane have been received from Roxie, Crystal Springs, Pelahatchie, McNair, and Yazoo City. Specimens were received from Canton where they were reported as injuring strawberries.

GREENHOUSE AND ORNAMENTAL PLANTS

MISCELLANEOUS FEEDERS

STRAWBERRY FLEA BEETLE (Haltica ignita Ill.)

Florida

G. B. Merrill (March 28): This insect was reported as attacking citrus, rose, oleander, gladiolus, St. Augustine grass, and all weeds, at Tampa.

APHIDIDAE

Georgia

O.I.

J. Snapp (April 20): Apparently more abundant than usual at this season of the year. Attacking ornamentals in Fort Valley.

WHITE FLIES (Aleurodidae)

Oliver I. Snapp (April 4): These insects are apparently more abundant than usual on a number of plants and shrubs (ornamentals) in the yards at Fort Valley. In some cases considerable damage has been done.

GALL

CHRYSANTHEMUM/MIDGE (Diarthronomyia hypogaea Loew)

Ohio

E. W. Mendenhall (April 26): The chrysanthemum midge has been well under control in the greenhouses in Springfield. It was taken in time and the use of nicotine sulphate seems the most effective. Fumigation does not seem very effective in the control of the midges.

CRAPE MYRTLE

STRAWBERRY FLEA BEETLE (Haltica ignita Ill.)

Florida

G. B. Merrill (March 29): At Winter Haven this insect was completely defoliating crape myrtle, doing severe damage.

ROSE

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Louisiana

W. E. Hinds (April 25): The cottony cushion scale has been unusually abundant in the vicinity of Hammond and Covington and has been reported by several on roses at Baton Rouge.

STRAWBERRY FLEA BEETLE (Maltica ignita Ill.)

Florida

G. B. Merrill (April 1): Attacking rose at Dundee, doing severe damage.

RASPBERRY CANE BORER (Oberea bimaculata Oliv.)

Virginia

F. W. Poos (March 29): Several rose growers in Norfolk have this month reported damage by this insect.

A DASCILLED BEETLE (Ptilodactyla sp.)

Monthly Letter of the Bureau of Entomology No. 155 (March, 1927): Dr. E. A. Chapin spent March 3, 4, and 5 in Philadelphia, studying types of Coleoptera, especially those belonging to the genus Ptilodactyla. Since his return to Washington he has completed a short paper on Ptilodactyla, describing new species, one of which is injurious to roses in greenhouses.

F O R E S T   A N D   S H A D E - T R E E   I N S E C T S

MISCELLANEOUS FEEDERS

Louisiana

FALL WEBWORM (HYEPHANTRIA CULEA Drury)  
T. E. Holloway and W. E. Haley (April 12): The fall webworm has made its appearance in southeastern Louisiana. It was observed on willow, privet, and rose.

CAMPHOR

CAMPHOR SCALE (Pseudacnidia duplex Ckll.)

Louisiana

W. E. Hinds (April 25): The camphor scale has spread to Jennings and is destroying camphor trees at that point.

CEDARS

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Kansas

J. W. McColloch (March 28): The cedar trees at Independence and Beale are covered with the bags of this insect.

EUONYMUS RADICANS VEGETUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

ew York

E. P. Felt (April 22): This scale was so abundant on a Rochester planting that it was cut to within 6 inches of the ground, the infested vines burned, and the stumps sprayed with miscible oil. This treatment was effective (R. E. Horsey).

orth  
Carolina

Z. P. Metcalf (April 25): The Euonymus scale is especially abundant this spring.

HAWTHORN

SILKY ANT (Formica fusca subsericea Say)

issouri

A. C. Burrill (March 17): In the woods at Jefferson City, these workers are gnawing into opening buds, in some cases gnawing into the very heart of the bud.

HOLLY

FUSTULE SCALE (Asterolecanium pustulans Ckll.)

rginia

F. W. Foos (March 23): Doing considerable damage on one estate at Norfolk. Attacking holly.

LILAC

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

ew York

E. P. Felt (April 22): Two years ago about 15 lilac shrubs in Cobb's Hill Park, Rochester, were very badly infested, most of the branches being completely covered. The shrubs were cut to the ground and today they are full of flower buds with every promise of a magnificent bloom (R. E. Horsey).

uth Dakota

H. C. Severin and Geo. Gilbertson (April 14): Ordinarily this scale is one of our most serious pests of fruit trees, shade trees, etc. It did not pass the winter very successfully. In many instances less than 5 per cent of the eggs survived the winter.

LILIES

A NOCTUID (Xanthopastis timais Cramer)

orida

J. R. Watson (April 3): The Chinese lily and Amaryllis, the growing of which has been rapidly extended in Florida during the past two years, are in some localities being attacked by the caterpillar Xanthopastis timais Cramer..

BOXELDER.

BOXELDER APHID (Periphyllus negundinis Thos.)

Missouri

A. C. Burrill (April 17): So numerous on Quarter-developed clusters of seed keys and peduncles as to shower honeydew all over surrounding bushes and grass. Cremastogaster lineolata, is tending them, and no enemies have been noted.

ELM

ELM SCURFY SCALE (Chionaspis americana Johns.)

South  
Dakota

H. C. Severin (April 4): This scale has become exceedingly abundant and harmful to elm during the past year in South Dakota.

ELM BORER (Saperda tridentata Oliv.)

South  
Dakota

H. E. Severin (April 14): The elm borer has killed many elms in South Dakota during the past few years.

ELM LEAF BEETLE (Galerucella xanthomelaena Schrank)

New York

E. P. Felt (April 23): The elm leaf beetle is expected to appear in the Rye area in slightly increased numbers as compared with last year (Henry Bird).

REDDISH ELM SNOUT BEETLE (Maedalis armicollis Say)

South  
Dakota

H. C. Severin (April 14): The reddish elm snout beetle has been increasing in numbers in South Dakota during the past years. It does considerable damage.

JUNIPER

JUNIPER WEBWORM (Ipsolophus marginellus Fab.)

Connecticut

W. E. Britton (April 19): Many twigs have been webbed together with larvae feeding inside the webs at Cheshire.

SPRUCE

SPRUCE GALL APHID (Adelges abietis L.)

W. E. Britton (April 23): Old galls received from New Haven and Southington on Norway spruce.



# INSECTS INFESTING HOUSES AND

## PREMISES

### TERMITES

- Illinois A. E. Miller (April 18): Observations upon the biology and control of the common termite Peticulitermes flavipes Kol. are being continued by the State Natural History Survey. The chief offense thus far found responsible for these insects gaining access to buildings is wooden cellar window frames in direct contact with the soil, with unfilled mortar joints in foundation walls ranking a close second. From numerous reports, this insect would seem to be generally distributed throughout the State with the greatest intensity prevailing through central and southern counties.
- Missouri A. C. Burrill (April 5): Specimens were sent to Dr. Snyder for determination on April 8, the swarm beginning on April 5, and continuing through to April 11. They were worse around the radiator and one corner of a living-room, coming out of cracks between the oak floor and under the baseboard. It was also a general nuisance to invalids.
- A. C. Burrill (April 7): Hundreds of winged termites swarmed in the basement of the Capitol March 14, which is the earliest record for this region. Probably it was abortive in the sense that none of them were observed to scatter out of doors.
- Nebraska Don B. Whelan (April 25): At Julian (Nemaha County) termites have damaged the timbers in houses, a church, and a school building. They have also been reported damaging a house at University Place (Lancaster County) and killing cherry trees in Phelps County. They have also been reported in Omaha (Douglas County).
- Kansas J. W. McColloch (April 19): Injury by termites seems to be on the increase. Damage to woodwork in dwellings has been reported during the past month from Lindsborg, Salina, Americus, Lyons, Fort Scott, Pleasanton, and Herington. At Salina the woodwork in one house has been replaced twice within the last three years. A store building at Coffeyville has had the framework of the show windows undermined. Tree roots have been injured at Logan. A pin oak tree at Manhattan has been girdled and rhubarb plants at Bushton have been injured.
- Texas E. C. Bishopp (April 23): Many reports have been coming in of white ants swarming in and about residences in this City (Dallas).

### TRAIL ANT (Cremastogaster lineolata Say, var.)

- Missouri A. C. Burrill (April 7): On April 3, during the great activity of this species reported previously for this date, a small colony, some two dozen winged Queens, was observed to swarm from the foundation of a garage at Jefferson City about 2 p.m.

CRUSTACEAN (Caecidotea stygia Pack.)

Alabama G. E. Culver (March 31): Found in the wells at Mountain Creek.

ROACHES (species undetermined)

Alabama Mrs. E. E. Russell (March 31): Reported from Jasper.

POWDER-POST BEETLES (Lyctus spp.)

Nebraska Don B. Whelan (April 25): These beetles were found very numerous in floors in Omaha, where they had caused quite a little damage. They have also been reported as working on cottonwood lumber at Syracuse, Otoe County.

Kansas J. W. McColloch (April 7): These insects have caused considerable damage to the oak pews in a church at Punynamee, Harper County.

LARDER BEETLE (Dermestes lardarius L.)

New York E. P. Felt (April 25): Dermestids, especially Dermestes lardarius, were somewhat numerous April 20.

CARPET BEETLE (Anthrenus scrophulariae L.)

New York E. P. Felt (April 25): A few Anthrenus scrophulariae were observed April 20.

I N S E C T S   A T T A C K I N G   M A N   A N D

D O M E S T I C   A N I M A L S

MAN

SALT-MARSH MOSQUITO (Aedes sollicitans Walk.)

New York E. P. Felt (April 23): The first adults were observed at Orient, L. I., April 20 (Roy Latham)

HUMAN FLEA (Pulex irritans L.)

Texas F. C. Bishopp (April, 1927): A few reports of human flea infestations in the vicinity of Dallas and Ft. Worth have come to our attention during April.

HOUSE FLY (Musca domestica L.)

Texas F. C. Bishopp (April 23): House flies have increased greatly during April, and are now causing considerable annoyance about dairies in this vicinity (Dallas).

## CATTLE

### HORN FLY (Haematobia irritans L.)

Texas

F. C. Bishopp (April 23): During March, horn flies became rather abundant in southwestern Texas, but their number did not materially increase, it actually decreased in some sections of the State during April. This condition may be due to heavy wind and rain storms. On this date, the number of flies per animal ranges from 10 to 1500, and annoyance is less noticeable in most sections than normal for this time of the year.

### STABLE FLY (Stomoxys calcitrans L.)

Texas

F. C. Bishopp (April 23): Stable flies have been more or less annoying to stock throughout the winter, and at times during March and April, they have become quite troublesome, especially on dairy cattle.

### A LOUSE (Linognathus vituli L.)

Texas

F. C. Bishopp (April 23): During February, March, and April much complaint came from the cattlemen of western Texas on the infestation of their animals by these lice. Many ranchmen dipped their herds during February, March, and early April.

### A DUNG BEETLE (Canthon laevis Drury)

Texas

D. C. Parman & F. C. Bishopp (April 17): The first activity of tumble bugs was observed near Uvalde today. At times this insect materially reduces the abundance of horn flies.

### SCREW WORM (Cochliomyia macellaria Fab.)

General  
statement

F. C. Bishopp (April 25): Many screw worm flies came through the mild winter successfully, and the attack on livestock began exceptionally early this spring. In fact, some cases were reported during January and February in the southern part of Texas. Numerous cases began to appear in the range country of southwestern Texas in March, and the attack on livestock extended farther northward during April. Most stockmen expect an unusually bad screw worm year. The fact that the ranges are good, and that there has been comparatively light losses of stock on the range, are favorable for the stockmen. In several sections of western Texas, ranchmen are organizing for systematic trapping of screw worm flies. Some cases of screw worm injury to livestock have also been reported this spring from New Mexico and California.

## HORSES

### THROAT BOT FLY (Gastrophilus nasalis L.)

Texas

F. C. Bishopp (April 16): Throat bot flies have been attacking

horses in this vicinity (Menard) during the last few days. The number of eggs present is still very small.

SHEEP

SHEEP BOT FLY (Oestrus ovis L.)

Texas

F. C. Bishopp (April 16): Flies of this species were observed annoying sheep very much in the vicinity of Menard. (April 21): Adults of this species compelling sheep to stop grazing during warmer parts of the day at Dallas.

BLACK BLOW FLY (Phormia regina Meig.)

General  
statement

F. C. Bishopp (April 25): Losses from the attack of the wool maggot on sheep have been comparatively light in Texas up to April 20. The flies are still abundant, however, and very little shearing has been done. As a preventive measure, many sheepmen have tagged their flocks this spring and this is no doubt partially responsible for the reduction in the number of wool maggot cases.

POULTRY

STICKTIGHT FLEA (Echidnophaga gallinacea Westw.)

Texas

F. C. Bishopp (April 22): There is a general infestation of the sticktight flea at Uvalde, and the loss of young chickens has probably been between 5 and 10 per cent and as high as 50 per cent in at least one case.

CHICKEN MITE (Dermanyssus gallinae Redi )

Texas

F. C. Bishopp (April 25); The chicken mite appears to be about as abundant as usual this spring. Numerous reports of injury to fowls, especially during brooding, have been received.



THE INSECT PEST SURVEY  
BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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BUREAU OF ENTOMOLOGY  
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AND  
THE STATE ENTOMOLOGICAL  
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## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR MAY, 1927

A Hessian fly survey has been completed in 28 counties in Kansas. In general, the Hessian fly infestation is heavier than two years ago, when a very serious outbreak occurred. The crop in many fields will be a total loss. Despite unfavorable conditions, central Illinois shows about 7 per cent Hessian fly infestation.

During the first week in May, cold, wet weather placed the corn in central Illinois out of danger from the chinch bug. Later in the month reports of threatening numbers of this insect were received from Missouri and parts of South Carolina.

The lesser corn stalk borer has appeared in very injurious numbers in Jackson and nearby counties in the southern part of Mississippi. Serious outbreaks of this insect occurred in 1921 and 1924.

The clover leaf weevil has been much more abundant than normally throughout parts of Kansas and Missouri, and serious damage to the alfalfa crop was only prevented by the heavy rains.

The army cutworm practically ruined alfalfa and small grain crops in certain areas of South Dakota, and less serious damage by this pest was reported from parts of Oregon.

Over the western third of Kansas the pea aphid infestation was assuming the status of an outbreak in early April. Heavy rains, however, toward the last week in the month reduced the numbers of this insect to negligible proportions. Reports of serious damage by this insect have been received from Utah and southern California.

Aphids on deciduous fruit trees are reported as generally less abundant than usual over the New York State fruit belt, but from Pennsylvania southward through Virginia these insects were moderately abundant. Aphids in subnormal numbers are reported from the East Central States and the Pacific Northwest.

Codling moths began pupating during the second week in April in Pennsylvania. About 50 per cent were still larvae on May 20. This late transformation of the codling moth was observed westward across central Missouri. In the Pacific Northwest reports from Oregon indicate that 50 per cent of the larvae had pupated by May 3.

Through New England and eastern New York State southward to Pennsylvania the eastern tent caterpillar is prevalent enough to be attracting considerable attention this year.

Numerous reports were received from the prune and pear growing sections of Oregon of severe damage caused by the pear thrips. In the fruit belt of New York State little commercial damage has been occasioned by this pest.

The peak of the second generation of oriental peach moth larvae was reached the first week in May in the Fort Valley section of Georgia. This pest was reported for the first time from Holly Springs, Miss.

The plum curculio is much more numerous than it has been for a number of years in Georgia and South Carolina. It is also actively attacking the fruit crops in parts of Missouri.

Following the excessive rainfall in Missouri, damage by the seed corn maggot is being reported. This insect also did considerable damage in parts of Arizona.

Reports of severe cutworm damage do not seem to be so prevalent this season as during the last two years. Cabbage plants in seed beds have been severely damaged in parts of New York State, and the peppermint fields in Kalamazoo and Clinton Counties, Michigan, have already been severely attacked by these insects.

The corn ear worm is reported as much more abundant in the Fuerte Valley of Mexico than it has been during the past four seasons: injury to tomatoes ranging from 1 to 25 per cent. This insect also appears to be very numerous in Alabama where adults were observed on April 17, and the first eggs of the season on April 21. These two reports from the southern extremities of the continent may indicate a year of unusual abundance of this pest.

The cotton flea hopper was hatching in rather large numbers from South Carolina to Texas.

Very severe damage by wireworms to tobacco is reported from the Chadbourne section of North Carolina where damage runs in some cases from 50 to 90 per cent.

An unusual outbreak of the Santo Domingo cane butterfly was reported from Haiti, and the most severe outbreak of the sugar-cane beetle ever recorded is now under way in Mississippi.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA. FOR MAY, 1927

Grasshoppers greatly decreased in numbers in southern British Columbia during the late summer of 1926, and only the Peace River block and the Cariboo district are expected to experience severe outbreaks during the present season.

Wireworms caused an estimated crop loss of \$3,500,000 in the province of Saskatchewan during 1926, and present indications are that, with average spring weather conditions, they will cause higher than average damage in 1927. Wireworms continue to be the most widespread insect pest in Alberta.

The western wheat-stem sawfly, which was the most serious pest of the year in Saskatchewan during 1926, caused an estimated financial loss of



\$12,000,000 in that province. The number of hibernating larvae present in stubble last fall was far greater than ever before, and very severe damage may be expected during 1927 unless prevented by unfavorable weather conditions. The westward spread of this insect has involved more than one-third of the wheat-growing areas of Alberta, and the remainder is seriously threatened.

Probable outbreaks of the western army cutworm are indicated in southwestern Saskatchewan and certain sections of southern Alberta during 1927. The red-backed cutworm is decidedly on the decrease in Saskatchewan, and important damage, outside of gardens, and the possible exception of the extreme southeast of the province, is not expected during 1927.

The Colorado potato beetle infestation in British Columbia, which is limited to the southeastern corner of the province, occurs in two areas: One in the Creston district, and the other extending from Cranbrook to Fernie and the Crow's Nest down to the international border.

The San Jose scale is very scarce in the Niagara district, Ontario, owing to parasites and unfavorable weather conditions during the past two years.

A survey of the currant bud mite, Eriophyes ribis Hal., in the Victoria, Duncan, and Cowichan districts of British Columbia, has revealed that this pest has spread very little during the past few years, only eight infested localities having been found.

The pear leaf blister mite has become fairly abundant in the Georgian Bay district of Ontario.

A new apple pest, the gray-banded leaf-roller, Bulia mariana Fern., has appeared in the Annapolis valley, Nova Scotia, during recent years. At the present time the pest is centered around Berwick and Lakeville, but it is also scattered over many other sections of the valley. It is on the increase, but is not likely to become a serious pest in clean cultivated orchards.

The eye-spotted bud moth, Spilonota ocellana D. & S., was again the most serious orchard pest in Nova Scotia during 1926 and threatens to be just as serious, if not worse, in 1927.

The willow leaf beetle, which infested willow throughout the greater portion of south and central Manitoba during 1926 will in all probability reappear during 1927 and extend its activities considerably to the westward.

The bronze birch borer is causing considerable injury to ornamental white birch in practically all the towns and cities of New Brunswick.

The saw moth has increased its range in British Columbia, severe outbreaks being noted all over the Fraser River Valley from Vancouver to Chilliwack, a distance of 70 miles.

Caterpillars of Pinipestis zimmermani Grt. were received in pine twigs from Lake Annis, Yarmouth County, Nova Scotia, in October, 1926, constituting the first record of this insect in the province.

GENERAL FEEDERS

WHITE GRUBS (Phyllophaga spp.)

- New York E. P. Felt (May 24): The first swarm of June beetles was observed at Orient, Suffolk County, May 9 (Roy Latham). Several beetles were in flight at Bainbridge, Chenango County, May 4 (L. J. W. Jones). A few specimens were seen at Albany April 21 and May 7, though there was no extended flight. A serious injury by the grubs to Norway spruce in a nursery was reported from the vicinity of Flattsburg.
- Iowa C. N. Ainslie (May 20): White grubs are very much in evidence this spring everywhere in this region. The cold damp weather has thus far kept them in check and has also hindered the emergence of the adults.
- Missouri L. Haseman (April 23): The first arrival of June beetles in appreciable numbers occurred on the evening of February 26 in central Missouri.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Illinois J. H. Bigger (May 15): Despite very unfavorable weather conditions, both fall and spring wheat in central Illinois now show about 7 per cent infestation.
- Kansas J. W. McColloch (May 20): The Hessian fly has taken a big jump in the State during the past month. Our surveys are not complete but we have definite information for the counties, Rush, Pawnee, Edwards, Kiowa, Comanche, Barton, Stafford, Pratt, Barber, Ellsworth, Rice, Reno, Kingman, Harper, McPherson, Harvey, Sedgwick, Sumner, and Marion, and parts of Clark, Ford, Hodgeman, Ness, Ellis, Russell, Lincoln, Saline, and Dickinson, in which the fly is known to be present in damaging numbers. Many fields in Dickinson, Ellsworth, Saline, Rice, and Barton counties will be a total failure. In fact the infestation is heavier than two years ago, when this area suffered such a heavy loss.

CHINCH BUG (Blissus leucopterus Say)

- South Carolina J. O. Pepper (May 10): The first report of the chinch bug on corn comes from Fairfield County. This insect was present in large numbers in this section the latter part of last year.
- Illinois C. H. Chandler and J. H. Bigger (May 8): The weather of the present spring has been rainy, with temperatures below normal

most of the time. While observations by Chandler and Bigger in central and southern Illinois have shown chinch bugs present in a few fields in sufficient numbers to cause damage, the continued rains will make conditions such that these insects would not cause damage during the present season. Some chinch bugs could still be found in hibernating quarters in central Illinois May 8.

Missouri

L. Hanson (April 28): The spring migration of chinch bugs to wheat has attracted no attention, and in central Missouri there has been a very light movement of the pest up to the end of the month. (May 24): In spite of the heavy rains some farmers are complaining of threatening numbers of chinch bugs.

FLAINS FALSE WIREWORM (Eledus oraca Say)

Kansas

J. W. McColloch (May 1): Larvae of this insect were received from Goodland on April 21 and from Takeeney on April 26, with the information that they were injuring wheat.

WHEAT JOINT WORM (Homolita tritici Fitch)

North  
Carolina

E. P. Metcalf (May 24): Reported by the county agent as seriously damaging wheat in Stanley County.

CORN

CORN LEAF APHID (Aphis maidis Fitch)

Louisiana

T. E. Holloway and W. E. Haley (May 10): On a plantation near Thibodaux, populous colonies of Aphis maidis on corn were found, attended by an ant, probably *Solenopsis*.

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

T. E. Holloway and W. E. Haley (May 10): A serious infestation of the sugarcane moth, Diatraea saccharalis cruglioides, was found in corn on a plantation near Thibodaux. The plants were from 2 to 4 feet high. On an average, about 13 per cent were infested, the infestation running to at least 50 per cent in spots. As many as six borers, mostly large, could be found in a single stalk, and some were below the surface of the ground. Some pupae were found. Many plants were stunted and dying owing to the attack. A so-called trap row of corn next to a sugarcane field was found to be only slightly attacked. Trap rows of sorghum seemed to be completely free from attack. On being shown the extent of the infestation the planter stated that he would immediately pull up all the corn, put it through a silage cutter, and feed it. The writer pointed out that, in case of delay in cutting with a silage cutter, the stalks should be immersed in water for three days, such immersion having been found to destroy all borers. Not all the infested stalks showed the leaf scars characteristic of the early feeding of *Diatraea*.

some cases such feeding scars were masked by the larger holes of Laphygma frugiperda.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.,

Mississippi

K. L. Cockerham (May 11): Several fields of corn near Picayune are being practically killed, so that the farmers are plowing up the fields for replanting. The insect showed up very suddenly.

R. W. Harned (May 24): The lesser corn stalk borer, Elasmopalpus lignosellus, has appeared in injurious numbers in Jackson, Pearl River, Jefferson Davis, and Pike Counties in the southern part of the State. Serious outbreaks of the insect occurred in 1921 and again in 1924. No complaints were received during 1925 and 1926. The crops injured so far are corn and peas. In previous years sugarcane, sorghum, and beans have also been seriously injured.

A FLEA BEETLE (Halticinae)

South  
Carolina

J. O. Pepper (May 5): Reports have been received with specimens of a flea beetle, stating that considerable damage is being done to young corn plants in the field in various parts of the Piedmont section.

CORN AND COTTON WIREWORM (Horistonotus uhleri Horn)

North  
Carolina

J. N. Tenhet (May 2): An infestation of the corn and cotton wireworm, Horistonotus uhleri Horn, was found today in a 3-acre field of corn. Approximately one-third of the field was totally destroyed. As many as 11 larvae were found in a single hill of corn. This outbreak, though small, is interesting as this species has not previously been recorded from this locality.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

South  
Carolina

J. O. Pepper (May 12): The larvae of this insect are doing considerable damage in many cornfields in Anderson County.

ALFALFA

OUTWORMS (Noctuidae)

Utah

Geo. F. Knowlton (May 5): Outworms are causing damage to many fields of alfalfa in and around Richfield.

CLOVER LEAF VEEVIL (Hypera rufata Fab.)

Kansas

J. W. McColloch (May 20): During the past month we have had reports on injury to alfalfa from Eureka and Mankata, and to clover from Pleasanton.



Kansas

R. C. Smith (April 28): The clover leaf weevil has been unusually abundant this year in alfalfa. Have found it in every alfalfa field examined lately. It is less confined to spots than usual, the occurrence being rather general over all the field. The larvae are about half grown now (April 28). There would have been damage had not the recent heavy rains so stimulated growth. A field on the College farm was beginning to show injury when the rains solved the problem. Some diseased larvae have been found, but relatively few are thus attacked.

ARMY CUTWORM (Chorizagrotis auxiliaris Grote)

South Dakota

H. C. Soverin (May 15): Over some areas of Jerauld, Douglas, Aurora, and Charles Mix Counties the destruction of small grain and alfalfa crops was practically total. Alfalfa is being kept down by the feeding activities of the worm in some areas. Some worms are pupating at this date, but the greater number are not.

Oregon

Don C. Note (May 3): Western army cutworm Euxoa agrestis (Chorizagrotis auxiliaris Grote) reported by county agent H. G. Avery, April 28, Union County, doing damage to alfalfa, and by county agent W. C. Donaldson, April 9, Wallowa County, doing damage to wheat. These two outbreaks were verified by Mr. Rockwood, who reports under date of May 3, that the worms were very thick in places in Wallowa County but that winter wheat had made such good growth that the worms would probably not injure it seriously. In La Grande the worms had badly trimmed one young alfalfa field before the ranchers put out poisoned bran bait.

PEA APHID (Illinoia pisi Kalt.)

Kansas

R. C. Smith (April 2 to 28): The pea aphid was assuming outbreak proportions in early April in the eastern third of the State. The first report was from Sharon and Anthony April 2. We have had reports from Great Bend, Salina, and Topeka since. It occurs at Manhattan in every field but there is no perceptible injury. The small spots started in many fields in southern Kansas. I observed on a survey trip completed April 19 that the heavy rains occurring over about three weeks of April so stimulated the growth of alfalfa and destroyed so many aphids that all danger of an outbreak disappeared. I observed a field at Wichita where the aphids were abundant and injuring half of a 10-acre field on April 17, but after a hard rain on the 18th we could find only a few aphids; on April 19 there were not enough to conduct a control experiment. At this writing (April 29) the alfalfa is growing rapidly. The aphids are fairly plentiful, but no injury is apparent. A severe freeze about the middle of the month would have given us conditions of 1921 when over 100,000 acres were lost because of this insect.

J. W. McColloch (May 20): The pea aphid was responsible for considerable injury to alfalfa between April 20 and May 10. The

aphids are still abundant, but with good growing weather the alfalfa has been keeping ahead of the aphids.

- Utah Geo. F. Knowlton (May 6): The pea aphid is doing considerable damage to alfalfa, affecting some fields in central Utah so severely as to cause it to become yellowed and stunted.
- California R. E. Campbell (April 27): Continued cool weather throughout April held back alfalfa growth, but permitted multiplication of aphids. An area of approximately 1,000 acres infested, most of it badly enough to severely check the growth. The first crop will be both late and considerably reduced.
- Oregon Don C. Mote (April 1927): On April 27, Prof. H. A. Scullem and his class in ecology made a survey of vetch aphid (Illinoia pisi) infestation. The field surveyed contained 10 acres of common vetch on low ground. The vetch was about 10 inches high. Four square yards were counted. Number of plants examined, 943. Percentage of plants infested, 21 per cent. Winged and wingless forms, mostly the latter, were present.

AN APHID (Macrosiphum sp.)

- California T. D. Urbahns (May 10): E. H. Taylor reported serious infestations of aphids, Macrosiphum sp., attacking alfalfa throughout the Honey Lake Valley, Lassen County. Several thousand acres were involved. The report on May 20 by Mr. Wilson, Bureau of Entomology, indicates that losses were very severe to alfalfa growers, but parasites and other natural enemies were present in abundance and practically destroying the aphids.

CLEAR WINGED GRASSHOPPER (Camula pellucida Scudd.)

- California T. D. Urbahns (May 13): W. C. Barber reported grasshoppers, Camula pellucida, as severely attacking grain and alfalfa near the foothills in Kern County, where nymphs and adults were migrating from the canyons.

CLOVER

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

- Missouri L. Haseman (April 26): An unusually heavy epidemic of the clover leaf weevil has developed because of the prolonged cold rains and has done much damage. On April 22 a heavy infestation of the larvae with a fungus disease was noted at Carrollton.

# FRUIT INSECTS

## GENERAL

### APHIDIDAE

New York C. R. Crosby and assistants (May 2): Reports from Suffolk, Ulster, Chautauqua, Wayne, Orleans, and Columbia Counties indicate that aphids are generally less abundant than usual in the New York State fruit belt. Yates County, however, reports that they are very abundant in some orchards.

California T. D. Urbahns (April 16): W. C. Barber reported aphids in large numbers in Kern County flying and attacking such crops as peach, melon, apple, and cotton. Later investigations showed that Aphis gossypii and Aphis medicaginis were probably the two species most-ly involved and that they were migrating from the immense acreage of grassland where the grass and weeds were drying off along the foothills. (April 19): F. R. Brann reported aphids of several species in unusual abundance in fields, orchards and truck crops and stated that ladybird beetles, lace wing larvae and hymenopterous parasites were present in large numbers, in Tulare County.

## APPLE

### APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

Pennsylvania E. M. Worthley (May 11): Visited two orchards in which were found infestations of 1 to 10 per bud, mostly oat aphids, Rhopalosiphum prunifoliae. Colonies moderately abundant in new growth of apple in New Wilmington, Lawrence County. All stages, including winged migrants, present. Stem mothers beginning to hatch and appear on opening buds in different counties as follows:

Fayette.....	Mar. 24	.....	15 per bud average	6 orchards
Washington ..	Mar. 25	.....	moderate	1 orchard
Allegheny ...	Mar. 25	.....	moderate	1 "
Bedford .....	Mar. 26	.....	15-70 per bud	2 orchards
Blair .....	Mar. 26	.....	abundant	1 orchard
Lawrence .....	Apr. 6	.....	1-7 per bud	1 "

Virginia W. S. Hough (May 15): A survey was made of an average of 10 trees in each of 10 orchards in Frederick and Clarke Counties; an average of 10 aphids per bud in most orchards was found. The stage of development of plants was delayed dormant to prepink.

Missouri A. C. Burrill (May 20): The oat aphid seems to have migrated from its host on which it was sparingly present last month so that there is no considerable epidemic here.

APPLE APHID (Aphis pomi DeG.)

- New York C. R. Crosby and assistants (April 8 and 9): Present in normal numbers on opening buds of apple in Orange and Dutchess Counties.
- New Jersey New Jersey News Letter (April 25): Green aphids appear quite plentiful in orchards where effective control measures are not taken.
- Illinois W. P. Flint (May 23): Light infestations of this species have been reported in a few central and west-central orchards.
- Oregon Don C. Mote (April 1927): Eighty-five per cent of the green apple aphid, Aphis pomi DeG., in one orchard in the Willamette Valley were hatched on April 12, according to B. G. Thompson. By May 2 all eggs were hatched, and there were fair-sized colonies. The infestation was light as compared with last year.

ROSY APPLE APHID (Anuraphis roseus Baker)

- New York C. R. Crosby and assistants (April 22): Present in small numbers in most apple orchards throughout the State, including Long Island. This insect is not found in Clinton County orchards.
- A. S. Mills (May 2): Only a few rosy aphids are found in Greene County, and these have curled the leaves and are reproducing.
- A. B. Burrell (May 21): Confirming observations made last year, this insect has not been found in orchards in Clinton County.
- Virginia W. S. Hough (May 15): A survey of about 50 trees in each of 15 apple orchards in Frederick and Clarke Counties was made during the bloom and petal-fall stages of development. Occasional branches were slightly infested.
- Pennsylvania H. E. Hodgkiss (May 7): At hatching these insects increased normally in the central part of the State. During the period of April 10 to May 7 there has been an unusual reduction in numbers so that the infestation is negligible.
- Illinois W. P. Flint (May 23): No injury by the rosy apple aphid has been observed or reported in any section of the State at this season.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

- Mississippi R. W. Harned (May 24): Reported on apple from Lambert April 14 and from Moss Point May 10. Identified by A. L. Hamner.

CODLING MOTH (Carpocarsa pomonella L.)

- New York C. R. Crosby and assistants (May 2): About 50 per cent of the codling moths collected in Orange and Ulster Counties are in the pupal stage.



Pennsylvania

H. N. Worthley (May 12): The following is the development of the overwintering brood:

<u>County</u>	<u>Date</u>	<u>Per cent pupated</u>
Blair	April 28	16
Lawrence	April 27	10
"	April 11	25
Erie	May 3	20
"	May 12	25

South Carolina

J. O. Pepper (May 15): Many apples in Oconee County are being stung at the present time and a few contain worms.

Illinois

W. P. Flint (May 23): The cool wet weather of the spring has greatly delayed the emergence of the spring-brood adults of the codling moth. Examinations made in orchards in central and southern Illinois between May 17 and 20 showed that 25 per cent or less of the overwintering moths had emerged. Nearly 50 per cent were in the pupal stage and will undoubtedly produce adults within a short time should the weather turn warm. Over 20 per cent were still in the larval stage. This condition brings about a peculiar situation in the orchards, as where orchards were sprayed according to regular schedule fruit would not receive adequate protection at the time when the main first-brood larvae were hatching. In southern Illinois emergence started on April 25 and will probably continue well up to the middle of June.

Missouri

L. Haseman (April 25): A heavy brood of apple worms went into hibernation, but the birds and diseases have reduced their numbers immensely and at this time even in the orchards badly infested last year the worms and pupae are difficult to find. Pupation at Cape Girardeau began on March 30, and the first emergence of moths occurred on April 13, and on April 25 approximately 20 per cent of the larvae in the breeding cages had pupated. In Buchanan County approximately 30 per cent of the larvae had pupated on April 25.

L. Haseman (May 24): The codling moth is emerging with much irregularity this summer. Breeding cage records from the southern part of the State showed first moth emergence at about the normal date as compared with the development of apple blossoms and young fruit. In central Missouri the first emergence was from two to four weeks late, being a week later at Columbia than at either Kansas City or St. Joseph. The first moth emerged at Columbia on May 21. This irregularity and late emergence will increase the difficulty of keeping the fruit protected against the worms. In the southern part of the State the moths have been emerging quite regularly over a period of a month and have thus far showed no signs of reaching a peak of emergence. Approximately 25 per cent of the moths had emerged at the end of the first month of emergence. Excessive rainfall is also interfering with the ef-

fective spraying of orchards through the central and northern part of the State.

Oregon Don C. Mote (April): On April 25 about 20 per cent and by May 3 50 per cent of the codling moth larvae had pupated, according to B. G. Thompson.

APPLE BUD MOTH (Laspeyresia pyricolana Hirtf.)

Pennsylvania H. E. Hodgkiss (May 7): Abundant in Northumberland County, chiefly in unsprayed orchards or where delayed-dormant spray was not applied on account of seasonal conditions.

CIGAR CASE BEARER (Coleophora fletcherella Farn.)

New York C. R. Crosby and assistants (April 22): Found in small numbers in most apple orchards, but more commonly in western New York, especially where arsenicals have been omitted in past years in the early sprays.

PISTOL CASE BEARER (Coleophora malivorella Riley)

New York C. R. Crosby and assistants (April 22): Found in small numbers in most apple orchards, but more commonly in western New York, especially where arsenicals have been omitted in past years in the early sprays.

BUD MOTH (Imetocera cecillana Schiff.)

New York C. R. Crosby and assistants (May 7): While commonly found over all the State, reports from western New York indicate that this pest is uncommonly abundant especially in orchards which did not receive an early poison spray.

M. N. Taylor (May 2): Bud worms are quite active in unsprayed orchards in Erie County this year.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

New Hampshire W. C. O'Kane (May 18): Infestation by tent caterpillars is spot as usual. In some localities webs are so much in evidence as to make the roadsides unsightly. In others they are relatively scarce. As usual, wild cherry is the principal host plant. Apple foliage, however, especially on neglected trees, is attacked.

Connecticut W. E. Britton (May 27): About as abundant in some localities of Fairfield and New Haven Counties as last year, less abundant in others.

New York E. P. Felt (May 24): The apple tent caterpillar, Malacosoma americana, is more numerous than usual in the Rochester parks and reported as quite common in the surrounding country (R. E. Horsey).

Abundant as compared with average years at Rockland, and at Bainbridge in Schoharie County (L. J. W. Jones). More abundant than usual about Genesee, Livingston County (R. A. Green). More abundant than in a number of years at Orient, Suffolk County (Roy Latham). The pest is somewhat abundant locally in the upper Hudson Valley, the caterpillar being more than half grown.

(May 25): The apple tent caterpillar, Malacosoma americana, occurs in less numbers than during the past few years in the territory extending from Poughkeepsie, south of New York City and east of Long Island to East Hampton, its numbers being approximately one-fourth those of two years ago and in some sections probably over one-tenth (W. M. Armstrong).

W. E. Blauvelt (May 2): Tent caterpillars are abundant on apples and peaches in Orange County.

C. R. Crosby and assistants (April 22): In the Hudson Valley the newly formed nests are commonly found on roadside trees and not uncommonly in commercial plantings, attacking apples and other fruits. In western New York this pest is rarely found in commercial plantings, but is fairly common on roadside trees.

Pennsylvania

H. E. Hodgkiss (May 27): Abundant in many apple orchards in some central counties, where neglected or where spraying oils were applied in delayed dormant, none where lead arsenate was used in delayed dormant.

APRICOT LEAF-EEVIL (Paraptocnus sellatus Beh.)

Oregon

Don C. Mote (April 1927): The oak weevil, Paraptocnus sellatus, was observed April 12 by B. G. Thompson feeding on apple grafts.

SPRING CANKER WORM (Paleacrita vernata Fock)

New York

A. M. Boyce (May 2): A few spring canker worm larvae have been found in Ulster County feeding on the foliage.

E. F. Felt (May 25): Cankervorms, probably the spring canker worm, appeared within the last few days in southeastern Westchester County, that is, along the north shore of Long Island, though not in large numbers. It is quite abundant in White Plains and it has appeared farther north toward Mt. Kisco, where it had caused very little damage heretofore. It is suggested that spraying and increase in the number of insect enemies has greatly reduced this pest adjacent to Long Island Sound whereas in the uncontrolled areas northward there has been a very definite increase.

TARNISHED PLANT BUG (Lygus pratensis L.)

Pennsylvania

H. E. Hodgkiss (May 27): Found in abundance in central Pennsylvania puncturing stems of apple clusters as they are in the pink condition.

APPLE REDEUG (Lygidea mordax Reut.)

New York

C. R. Crosby and assistants (May 21): Reports from workers in Nassau, Orange, Suffolk, Greene, Onondaga, Columbia, Wayne, Niagara, and Monroe Counties indicate that this pest is present in moderate numbers in a few orchards but the percentage of orchards infested is small. In the counties bordering Lake Ontario infested orchards are confined principally to the southern part of these counties. In Greene County the first nymph of Heterocordylus malinus was found on May 12. Lygidea mordax, however, is now present in large numbers while the other species is not common. This condition is reversed in Onondaga County.

Pennsylvania

H. E. Hodgkiss (May 3): These were all in the first instar in neglected orchards in Dauphin County. Rather general. First report in 1927.

H. M. Worthley (May 11): Abundant at New Wilmington, Lawrence County last year. Just hatching. Grower could find none two days ago. Today found 25 per cent of terminal leaves stripped by feeding, with 1-4 first instar bugs at each terminal. Trees just past full bloom.

APPLE TREE BORER (Rhizopertha collaris Erich.)

New York

W. E. Blauvelt (May 2): Considerable injury from the round-headed apple tree borer was noticed in several young orchards in Orange County. One borer dug out was in the pupal stage.

LACE BUG (Corythuca sp.)

Oregon

Don C. Mote (April 1927): The first lace bugs, Corythuca sp., were observed on apple trees by B. G. Thompson April 12. A few were mating. May 1 no young were observed.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

New York

W. E. Blauvelt (April 8): This scale is rather scarce in most orchards in Orange County. No serious recurrence has been reported from orchards where no sprays have been directed against the pest.

Virginia

W. S. Hough (May 15): A survey was made of 25 trees per orchard in 12 orchards near Winchester. From 10 to 25 twigs per tree in the bud swollen stage were infested.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Illinois

W. P. Flint (May 23): This insect has been quite destructive in sod orchards in western and south-central Illinois. In some orchards it is present in very large numbers.



APPLE CUPCULIO (Tachypterellus quadrigibbus Say)

Missouri

L. Haseman (May 24): The apple curculio began attracting attention in the orchards along the Missouri River about May 15 and it is actively feeding and ovipositing at this time, May 25.

EUROPEAN RED MITE (Paratetranychus vilosus Can. & Fanz.)

New York

A. M. Boyce (April 5): Light infestations of eggs in all orchards in Ulster County on apple, peach, and cherry. Many growers of apples are using oil sprays with the object of destroying the eggs. E. B. Frane (April 5): Infestations of eggs in Dutchess County are lighter than last year at this time.

C. R. Crosby and assistants (April 22): By this date eggs were starting to hatch in Orange, Ulster, and Dutchess Counties, while it will be a week before blooming. (May 7): Reports from the Hudson Valley indicate that hatching is later than last year. Relatively few appeared on the leaves at the time the preblossom spray was applied while last season a large percentage of the eggs were hatched at this time. In western New York hatching has started, and the buds are in an almost ideal condition for making a preblossom application.

A. S. Mills (May 2): Very few red mites have hatched in Orange County.

New Jersey

New Jersey News Letter (April 7): Red mite eggs were found hatching in New Brunswick April 20, and hatching should be well advanced in South Jersey.

PEAR

PEAR PSYLLA (Psyllia pyri L.)

New York

C. R. Crosby and assistants (April 22): Deposition of eggs has been heavy over all the State. Eggs were hatching in the Hudson River Valley a week before blossoming. It is not likely that many eggs will be laid during blossoming as the adults are dying off rapidly. (May 7): In the Hudson River Valley where pears are now in bloom it is evident that considerable oviposition occurred after the cluster-bud egg spray was applied. In western New York, while many late eggs were laid the egg spray applied before blossoming destroyed a larger percentage of the total number of eggs than in the Hudson River Valley. Hatching started early and a considerable percentage of hatched nymphs appeared well before blossoming.

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

New York

M. E. Buckman (May 21): Pear leaves everywhere show infestations. In one orchard near Lake Ontario, an orchard of the Seckel Variety is severely infested. The foliage of the trees has a reddish cast that is noticeable for some distance.

PEAR MIDGE (Contarinia pyrivora Riley)

New York

C. R. Crosby and assistants (May 21): Reports from Orange, Ulster, Dutchess, and Columbia Counties indicate that infestations are rather common but light. In Dutchess the varieties injured are Clapp, Seckle, and Bosc, while in Ulster all varieties have been found infested.

PEAR THRIPS (Taeniothrips inconsequens Uzel)

New York

W. E. Blauvelt (April 8): Present in small numbers, apparently causing no damage in commercial orchards. (April 22): A few pear orchards in Orange County were badly blasted, but in general injury was light. The following reports dated April 8 have been received: A. B. Buchholz, Columbia County: "Rather abundant. Some damage to pears already noted, and if weather continues cool considerable damage will occur." A. S. Mills, Greene County: "Small numbers have appeared on Seckel and Kieffer varieties of pear. Damage probably slight." A. M. Boyce, Ulster County: "Due to gradual emergence and advanced stage of pear buds, little or no damage was thought to be caused by this pest this season."

E. E. Franc (May 2): Thrips are doing some damage in Dutchess County, even where the clusters are well separated.

A. B. Buchholz (May 2): Thrips are doing some damage in Columbia County, but it is relatively light.

Oregon

Don C. Mote (April 1927): The pear and prune thrips, Taeniothrips inconsequens, was first observed by J. Wilcox on March 17. This thrips is unusually abundant this spring. Numerous reports of serious damage to the blossom spurs of pruned and pears are being reported.

CLOVER MITE (Bryobia praetiosa Koch)

New York

E. E. Franc (May 2): Clover mites are abundant in one neglected orchard in Dutchess County.

SCURFY SCALE (Chionaspis furfura Fitch)

New York

P. J. Chapman (April 22): Heavy infestations have been found in two or three pear orchards while a number of others in Oswego County had light infestations.

E. E. Franc (May 14): Eggs started to hatch on parts of the tree most exposed to sunlight.

PEACH

GREEN PEACH APHID (Myzus persicae Sulz.)

New York

C. R. Crosby and assistants (May 21): Heavy infestations of peaches have been found in Ulster and Columbia Counties.

A. M. Boyce (April 5): Young nymphs found in moderate numbers on opening buds.

#### APHIDAE

California

T. D. Urbahns (May 15): J. W. Dixon reported aphids attacking peach trees more severely than usual in Inyo County.

#### PEACH BORER (Agrobia exitiosa Say)

Georgia

O. I. Snapp (May 20): The peach tree borer is apparently more abundant in the Griffin section than usual. In most cases where infestation is heavy the paradichlorobenzene treatment was omitted last year.

#### ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

Georgia

Snapp & Swingle (May 5): The peak of the larval period of the second generation was reached in the field today. Second-generation larvae are in both twigs and green peaches. There was a rather heavy first-generation infestation in an orchard in Crawford County in which October peaches are grown.

Mississippi

R. W. Harned (May 24): Larvae and pupae that have been tentatively determined by J. M. Langston as Laspeyresia molesta were collected on peach at Holly Springs, April 25.

#### FLOWER THRIPS (Frankliniella tritici Fitch)

California

T. D. Urbahns (May 11): E. A. Crane reported the wheat thrips attacking peaches, the infestation being quite general throughout Yuba County although not especially severe.

#### PLUM CURCULIO (Conotrachelus nemophar Hbst.)

South  
Carolina

J. O. Pepper (May 2): The plum curculio has occurred in the Piedmont section in large numbers and some peach orchards have a severe infestation. The weather conditions have been such that a spray schedule could not be followed.

Georgia

O. I. Snapp (May 20): Larvae to the number of 5416 were reared from 5 bushels of peach drops collected on April 11 from Fort Valley. The infestation is much heavier than it has been for several years. The drought has been detrimental to the development of pupae in the soil during the last month.

Missouri

L. Haseman (May 24): This pest has been at work feeding and laying eggs since April 30, and is still actively feeding and ovipositing on this date. Early hatching grubs were from one-half to two-thirds grown on May 13, and are now seemingly full-fed.

CHERRY

FRUIT TREE LEAF BEETLE (Syneta albida Lec.)

Oregon DonC. Mote (April 1927): The Syneta leaf beetle, Syneta albida Lec., was first observed in a cherry orchard by J. Wilcox on March 30. On April 12 B. G. Thompson reports observing it in damaging numbers attacking apple grafts. May 4, this beetle is apparently not so numerous as it was last year.

BLEEDING TREE MAGGOT (Lycetobia divergens Walker)

New York E. P. Felt (May 24): Larvae of Lycetobia divergens were received from Huntington, L. I., and somewhat definitely associated with exudations of sap from a sweet cherry tree that was in a decidedly unhealthy condition.

FALL CANKER WORM (Alsophila pometaria Harr.)

California T. D. Urbahns (April 16): G. E. Brenner reported the fall canker worm on cherries and prunes as the most extensive and severe attack experienced in 20 years in Sonoma County. While they have been present in other years, blackbirds usually clean up the infestation, but this year blackbirds are unusually scarce.

BLACK CHERRY APHID (Myzus cerasi Fab.)

New York E. E. Frane (May 2 ): The cherry aphids are reproducing.

PLUM

SPRING CANKER WORM (Paleacrita vernata Peck)

California T. D. Urbahns (April 25): T. A. Willis reported the spring canker worm attacking the prunes in Colusa County. Heavy infestations were quite common along the Sacramento River.

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Missouri A. C. Burrill (May 17): Very numerous on home orchard and backyard garden plums. Also on escaped wild brookside whips of plum and peach. (May 20): The rusty plum louse is now becoming general on wild and cultivated plums, and perhaps some peach sprouts.

Mississippi R. W. Harned (May 24): Reported on plum from Moss Point on April 20, from Ruleville on April 27, and from Lake Cormorant on May 21.

MEALY PLUM APHID (Hyalopterus arundinis Fab.)

Missouri L. Haseman (May 24): There seems to be an unusual abundance of this brownish louse on wild plums and on certain cultivated var-



ieties of plums in central Missouri. While very abundant on some trees it does not seem to be seriously damaging the growth of the fruit.

California

T. D. Urbahns (April 15): H. A. Crane reported Hyalopterus arundinis Fab. appearing in the prune orchards, and states that on one ranch 500,000 leaf-mining beetles, W. N. convergens Guer., have been placed on the prune orchards for control. (May 11): H. A. Crane reported Hydrophilus attacking prune trees very severely in some orchards throughout Faba County.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

California

T. D. Urbahns (April 15): O. E. Bremner reported the forest tent caterpillar present in the most severe infestations ever experienced in Sonoma County. Larvae hatched on prune and plum trees after the trees were ready to bloom and destroyed buds, blooms, and young leaves.

GREAT BASIN TENT CATERPILLAR (Malacosoma fragilis Stretch)

California

T. D. Urbahns (April 25): I. A. Willis reported the Great Basin tent caterpillar, Malacosoma fragilis, as attacking prune trees in considerable numbers in Colusa County, the attack on prune trees being rather unusual for the district.

RASPBERRY

APHIDAE.

New York

A. M. Boyce (May 2): The big green species of aphid was found on raspberries in several plantings.

GRAPE

CUTWORMS (Noctuidae)

New York

C. R. Crosby (May 3): Grape buds in several vineyards were seriously injured by climbing cutworms while light injury was found in other vineyards. The general loss is probably not so heavy as last year.

GRAPE LEATHOPPER (Eruthroneura cornes Say)

California

T. D. Urbahns (April 19): F. R. Bran reported overwintering adults of the grape leafhopper in considerable evidence throughout the vineyards over the entire Tulare County. Indications were that heavy infestation might be expected, and growers were advised to prepare for special control measures.

A TREEVIL (Glyptoscelis squamulata Cr.)

California

T. D. Urbahns (April 19): A. L. Bottel reported Glyptoscelis

squamulata as attacking grape foliage and buds, causing considerable alarm among grape growers of the Coachella Valley in Riverside County.

### CURRENT

#### CURRENT FRUIT FLY (Epochra canadensis Loew)

Oregon

Don C. Mote (April 1927): The current fruit fly, Epochra canadensis, was observed in the field for the first time this season by J. Wilcox on April 11. Last year the first flies were observed April 18.

#### CURRENT APHID (Myzus ribis L.)

New York

W. E. Blauvelt (May 2): A few current aphids have started to work on the leaves in Orange County.

A. M. Boyce (May 2): The current aphid is fairly prevalent in some patches and the first signs of injury are showing up in Orange County.

#### IMPORTED CURRENT WORM (Pteronidea ribesi Scop.)

New York

A. M. Boyce (May 2): No current worm eggs have been found.

W. E. Blauvelt (May 21): Current infestations are rather general, but not serious.

#### BLACK GOOSEBERRY BORER (Xylocrius agassizi Lec.)

Oregon

Don C. Mote (April 14): Adults of the black gooseberry borer, Xylocrius agassizi, were found in the field by J. Wilcox April 14. On this same date larvae were found in the burrows in the root and crown of the plants.

### PECAN

#### HICKORY APHID (Longistigma caryae Harr.)

Mississippi

R. W. Harned (May 24): Reported on pecan at Greenwood May 3, and at Webb May 4; on bay at Cleveland May 11. Identified by A. L. Hammer.

#### PECAN BUD MOTH (Proteopteryx bolliana Sling.)

Mississippi

R. W. Harned (May 24): Specimens of the pecan bud moth, Proteopteryx bolliana, were collected on pecan at Pascagoula May 5, and at Piquette May 18, at Cleveland May 21, and at Ripley May 18.

#### PECAN LEAF CASE BEARER (Acrobasis nebulella Riley)

Georgia

O. I. Snapp (May 20): This insect is very abundant at Fitzgerald and has done considerable damage in several groves of pecan.

Mississippi R. W. Harned (May 24): Specimens of the pecan leaf case bearer, Acrotasis rebulella, were collected on pecan trees at Howisan, April 25 and at Natchez April 27.

HICKORY-SHOOT CURCULIO (Conotrachelus aratus Germ.)

Mississippi R. W. Harned (May 24): Specimens that have been identified by J. A. Langston as probably Conotrachelus aratus have been received from Brookhaven, Prentiss, Columbia, Wesson, Picayune, Moselle, and Natchez, where they were reported as causing serious damage to pecan trees.

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Mississippi R. W. Harned (May 24): The first colony of walnut caterpillars was observed at Ocean Spring, April 25, feeding on pecan.

FALL WEBWORM (Hyphantria cunea Drury)

Mississippi R. W. Harned (May 24): The fall webworm, Hyphantria cunea, has made its appearance at Picayune, Pearl River County. Specimens taken from pecan trees were sent to this office on May 15, 1927. Specimens taken from pecan trees have also been received from Moss Point.

A PHYLLOXERA (Phylloxera notabilis Perg.)

Mississippi R. W. Harned (May 24): Galls on pecan have recently been received from Yazoo City, Jackson, Columbus, and Meridian. They have been identified by A. L. Hamner as those caused by Phylloxera notabilis.

CITRUS

CITRICOLA SCALE (Pseudococcus citricola Quayle)

California T. D. Urbahn (April 19): F. R. Brann reported the citricola scale Pseudococcus citricola, as showing low natural mortality and corresponding high increase in Tulare County, and encouraged timely control.

TRUCK - C R C P I N S E C T S

MISCELLANEOUS FEEDERS

SPOTTED CUCUMBER BEETLE (Dialeroticus duodecimpunctata Fab.)

Alabama L. T. Prannon (May 15): Adults of this species have been found feeding on beans, mustard, turnips, cabbage, beets, and swiss chard in this locality (Birmingham).

SEED CORN MAGGOT (Hyalemyia cilicrura Rond.)

Missouri

L. Haseman (May 24): Owing to the excessive rainfall and the backward spring a number of farmers are complaining of damage by this insect. The damage is being done largely in the case of early planted corn.

Arizona

Arizona News Letter Volume 3, No. 5, March 31: The seed-corn maggot (Hyalemyia cilicrura) was generally present over the Valley during February and March. The insect caused injury to young plants of cucumbers, watermelons, cantaloupe, and beans. The adult of this white footless maggot that worked in the sprouting seeds and young stems is a blackish two-winged fly which somewhat resembles a small house-fly; and comes to lights at night in great numbers.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

Alabama

L. W. Brannon (May 2): This species is doing serious damage to young turnips, mustard, and radishes and is making them unmarketable. Very few of the truckers in this district (Birmingham) are using any control measures.

CUTWORMS (Noctuidae)

New York

C. R. Crosby and assistants (May 21): In Suffolk County cutworms are rather prevalent, causing serious loss to early cabbage. In Nassau County serious injury has occurred in many cabbage beds and cold frames. Ulster County reports serious infestations in asparagus plantings.

Michigan

R. H. Pettit (May 20): Cutworms are very active in peppermint in fields in Kalamazoo and Clinton Counties, many of them having already been severely attacked. The larvae are still small and therefore will be with us for some weeks. No other crops are seriously attacked as yet because at this season of the year only a few other crops are above ground.

GREEN JUNE BEETLE (Cotinis nitida L.)

Kansas

J. W. McColloch (May 7): Grubs of this insect were received with the information that they were abundant in some gardens at Erie, T.

CARROT RUST FLY (Psila rosae Fab.)

New Hampshire

W. C. O'Hane (May 13): Two lots of carrots received show the presence of the larvae of this species. In each case damage began last summer, according to the statement of the growers, and has continued through the winter in storage.



EGGPLANT FLEA BEETLE (Epidritia fuscata Gr.)

Alabama

L. W. Brannon (May 13): This species of flea beetle has been doing considerable damage to young eggplants in this vicinity (Birmingham).

A PLANT BUG (Epidrites incurvatus Dist.)

Mexico

A. W. Morrill (May 20): This bug was present in usual abundance during the fall and spring vegetable season, attacking beans, squash, and cucumbers. It was observed only in gardens. In one instance a few rows of cucumbers were completely ruined (Fuerte and Toluca Valleys).

SPINACH LEAF MINER (Pegomya hyoscyami Panz.)

New York

M. W. Taylor (May 2): First flies of the spinach leaf miner were observed on March 7 and in traps on April 19 in Erie County.

GARDEN SLUG (Agriolimax agrestis L.)

Ohio

E. W. Mendenhall (May 23): In many cases in and about Columbus, peas, lettuce, radishes, and other garden vegetables are being attacked by slugs on account of so much wet, cloudy weather.

Wisconsin

C. L. Fluke (May 3): These pests were very severe last year in Wisconsin gardens on cabbage, lettuce, celery, and like crops. Several reports are already in this year from Watertown as to the presence of large numbers of specimens, although garden crops are not yet above ground.

BEETLE AND LARVA

BOLL WORM (Holliothia obsoleta Fab.)

Alabama

L. W. Brannon (May 27): Tomato fruit worm moths were seen flying about in the field on April 17 and the first tomato fruit worm egg of the season was found on tomatoes on April 21. This egg hatched on April 29 and the larva is now about half grown. Eggs of this insect are very numerous on tomatoes now.

Mexico

A. W. Morrill (May 21): Much more abundant in Fuerte Valley during the six months vegetable marketing season ending May 1, 1927, than in any of four or five preceding seasons. Injury to tomatoes ranged from 1 to 25 per cent. In November and December, 1926, it was very evident that this was not comparatively abundant while its associate in tomato damage, Anthrenus glochialis, was comparatively scarce.

CUT WORMS (Noctuidae)

New Jersey

New Jersey News Letter (April 25): Cutworms were found injuring potatoes in cold fields.

EGGPLANT LEAF MINER (Phthorimaea glochinella Zell.)

Mexico

A. W. Morrill (May 21): Very few of these worms were present in Fuerte Valley in the fall of 1926 as compared with previous year. There was a rapid increase in the numbers in March and April resulting in an infestation of the tomatoes ranging from 25 to 80 per cent. Less than 5 per cent to March 1 increasing to 50 per cent by May 1.

GARDEN FLEA HOPPER (Halticus citri Ashm.)

Mexico

A. W. Morrill (May 21): About 25,000 acres of tomatoes were grown in Fuerte Valley during 1926-1927 vegetable season. Damage negligible on whole area, considerable attention given to control of hoppers in seed beds to prevent carrying infested plants to the fields; decrease over previous two seasons due to unexplained cause. Even where hoppers were considered present in tomato fields in threatening numbers in October and November, 1926, they failed to increase as in previous years. No natural enemies in evidence.

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New York

E. P. Felt (May 24): Has been seen in small numbers though the early potatoes have secured a good start at Orient, Suffolk County (Roy Latham).

Alabama

L. W. Brannon (May 23): This insect is doing considerable damage to potatoes, eggplant, and tomatoes in this district (Birmingham). Some of the truckers are using control measures with good results while others are losing their crops by not trying to control the insects. This insect is feeding on tomatoes to such an extent that control measures are being conducted.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

New York

E. P. Felt (May 24): The black flea beetle, Epitrix cucumeris, had become quite common by May 6, damaging potatoes only slightly in sheltered spots, at Orient, Suffolk County (Roy Latham).

SNAILS (Mollusca)

New York

K. E. Paine (May 21): Slug injury is common in cold frames.

California

T. D. Urbahns (April 18): A. E. Bottel reports slugs causing considerable damage to tomatoes in Coachella Valley, Riverside County.

CABBAGE

CABBAGE MAGGOT (Exleyria brassicae Bouche)

New York

J. W. Sinden (May 2): Cabbage maggot flies are abundant in Suffolk County both in the beds and in the fields set with cabbage.

and eggs are rapidly being laid. In Nassau County the cabbage maggot flies were seen for the first time on April 27, yet they have not appeared in very great numbers. A notice was sent out on the 25th for seed-bed treatment with corrosive sublimate.

C. R. Crosby and assistants (May 7): The flies have been reported plentiful from Long Island on cabbage and cauliflower. The flies had not appeared in Erie County, but are commonly found in Chautauque County at this time. (May 21): On Long Island practically all of the eggs of the first generation have been laid. As in past years the injury is serious. In Onondaga County and in western New York egg laying has started and many growers will use control measures, some for the first time this year.

CABBAGE APHID (Brevicoryne brassicae L.)

Georgia

O. I. Snapp (May 3): The cabbage aphid is very abundant this year at Fort Valley, and has seriously damaged young plants in commercial cabbage fields.

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Mississippi

R. W. Harned (May 24): Reported on cabbage from Myrtle on May 9, and on cabbage from Tupelo on May 19. Determination made by A. L. Hamner.

CABBAGE LOOPER (Antographa brassicae Riley)

Kansas

J. W. McColloch (April 27): Moths of the cabbage looper have been very abundant at Dwight and Manhattan.

DIAMOND-BACK MOTH (Plutella maculipennis Curtis)

Kansas

J. W. McColloch (May 1): A rather severe infestation of this moth was found on cabbage in Riley County at Manhattan.

HARLEQUIN BUG (Murgantia histrionica Hahn)

South

Carolina

J. O. Pepper (May 6): This insect is doing considerable damage in the Piedmont section on cabbage. It is also present on collards, turnips, and kale. It is unusually abundant.

Georgia

C. I. Snapp (May 9): A heavy infestation at Fort Valley of harlequin cabbage bugs had destroyed a field of rape by this date that had been planted on a poultry farm.

Alabama

L. W. Brannon (May 16): Adults of this insect appear to be fairly abundant in this locality (Birmingham). Egg masses are numerous and also young nymphs. Attacking cabbage, turnips, and mustard.

Mississippi R. W. Harned (May 24): Specimens of Murgantia histrionica were collected on turnips at Louis, April 28, and on turnip and rape at Brookhaven April 26.

STRAWBERRY

STRAWBERRY ROOT WORM (Paria canella Fab.)

Pennsylvania H. W. Worthley (May 11): Brought in from one farm at Claysburg, Blair County, where adults were found riddling strawberry leaves, appearing seriously abundant. Collected on May 7.

TARNISHED PLANT BUG (Lygus pratensis L.)

Missouri L. Haseman (May 24): This pest appeared May 9 to 16 in the strawberry fields in the vicinity of Monett, resulting in practically 100 per cent destruction of the crop of green berries in a week to ten day's time. The heavy epidemic, it seems, is not general though some damage is being done also in the strawberry fields at Columbia.

STRAWBERRY FLEA BEETLE (Haltica ignita Ill.)

Mississippi R. W. Harned (May 24): Flea beetles collected on strawberry plants at Osceolas, March 26, 1926, have recently been determined by E. S. Barbar as Haltica litigata. Specimens that have been tentatively identified as this species by J. M. Langston were received from Greenwood, May 20, where they were reported as causing serious damage to fuchsias. Other specimens that were also tentatively determined by Mr. Langston as Haltica litigata were received from Yazoo City, May 19, where they were reported as injuring tomato and pepper plants.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

New York E. E. Frane (May 21): One strawberry planting badly injured.

GREEN STRAWBERRY SLUG (Empria ignota Norton)

Michigan R. H. Pettit (May 20): The green strawberry slug, Empria ignota, has appeared in Cassopolis in Cass County, specimens having been sent in by H. H. Bernum, county agent. He reports a destruction of 2 acres of strawberries in less than 40 hours.

WHITE GRUBS (Phyllophaga spp.)

Kansas J. W. McColloch (May 10): White grubs are reported destroying strawberry beds at Derby.

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

Oregon Don C. Note (April): Overwintering strawberry root weevils, Brachyrhinus ovatus L., scarce in the Willamette Valley. Have



found them in only one strawberry patch and in this patch the weevil population per plant is less than one while in the Hood River Valley the weevils were found in one spot about 30 feet square in one patch at the rate of about 30 to the plant. This particular plot was a check plot (untreated) in last years experiments. Nearly mature larvae were present in the same fields.

STRAWBERRY ROOT APHID (Aphis forbesi Weed)

Mississippi R. W. Harned (May 24): Reported on strawberry from Corinth April 14, and from Durant May 10.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

Oregon Don C. Mote (April 28): Adult beetles and eggs of the asparagus beetle, Crioceris asparagi L., were received from Gervais on April 28.

BEANS

STRIPED BLISTER BEETLE (Epicauta vittata Fab.)

Alabama L. W. Brannon (May 23): The first striped blister beetle of the 1927 season was collected on lima beans in this vicinity (Birmingham).

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

South Carolina C. O. Eddy (May 19): Field activities began on May 10. Found eggs about that time in the Piedmont section. Active about 20 days earlier than last year.

Alabama L. W. Brannon (May 16): At this time 16 per cent of the Mexican bean beetles that were placed in the hibernation cage last fall have emerged. One overwintered female has deposited 10 egg masses in the insectary. All instars of larvae are seen in the field and egg masses are fairly numerous at Birmingham. Damage due to bean beetle larvae is showing up in spots. The first pupa of the 1927 season was found in the field on this date. First-generation adults will be cut in about 10 days. Cool weather is lengthening all stages of development.

SPOTTED LADYBIRD (Neigilla maculata DeG.)

Alabama L. W. Brannon (May 23): This beneficial insect is appearing in large numbers in this locality (Birmingham) feeding on plant lice and eggs and larvae of the Mexican bean beetle.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

South  
Carolina

J. O. Pepper (May 12): The adults of this insect are doing considerable damage to young beans in the Piedmont section. They are present in larger numbers than usual.

PEAS

PEA APHID (Illinoia pisi Kalt.)

California

R. E. Campbell (April 27): About 2,000 acres of seed peas in the Salinas Valley has become infested. One-fourth of the acreage is badly infested, and will be severely damaged, but the rest of the acreage will at least produce a partial crop.

T. D. Urbahns (May 13): V. G. Stevens reported aphids severely attacking beans and peas in the vicinity of Concord, Contra Costa County. The loss is estimated as 25 per cent.

Arizona

Arizona News Letter Volume 5, No. 3 March 31: The outstanding insect pest during the month of March was the pea aphid. Injury ran from a small per cent of damage to practically a total loss; in some fields large areas of the vines were killed.

ONION THRIPS (Thrips tabaci L.)

Mexico

A. W. Morrill (May 21): When the onions matured the thrips moved over to an adjoining field of green peas and scarred the pods on a few acres so that the crop was ruined for marketing green. There was some salvage by selling the dried peas (Yaqui Valley).

MELONS, SQUASH, AND CUCUMBER

SQUASH BUG (Anasa tristis DeG.)

Georgia

O. I. Snapp (May 20): Squash bugs are very abundant this year at Marshallville, doing considerable damage to watermelons. They have ruined some fields of melons. Growers are hand-picking and using nicotine sulphate.

Alabama

L. W. Brannon (May 23): Squash bugs are appearing in this locality (Birmingham) and are depositing eggs on squash. The first hatching egg mass was seen today.

SQUASH BORER (Melittia satyriniformis Hbn.)

Mississippi

K. L. Cockerham (May 7): On the above date I examined a crop of squash at Biloxi and found practically every stalk badly infested with borers. It is doubtful if the owner gets a single fruit from his crop. The stalks were already dying.

MELON APHID (Aphis gossypii Ghov.)

California

T. D. Urbahns (April 15): Geo Marchbank reported aphids on cantaloupes and watermelons in unusual abundance in Madera County, the plants being practically destroyed in some fields.

Mexico

A. W. Morrill (May 20): Aphid attack in cantaloupe fields in the spring of 1927 was of short duration. While growers assumed that they had controlled the pest in Yaqui Valley by insecticides, I am of the opinion that control was due to activities of a hymenopterous parasite (Aphidius sp.) which was doing effective work against the aphids on cotton sprouts in April. I did not personally visit the melon fields said to have been infested.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Mississippi

R. W. Harned (May 24): Specimens of the 12-spotted cucumber beetle collected on Irish potatoes at Picayune on May 5, and at Myrtle on May 9. Damage by these insects to cucumbers was reported from Bogue Chitto, May 17. Specimens were collected on corn at Natchez May 16.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Alabama

L. W. Brannon (May 3): This insect has been doing considerable damage to young cucumbers and squash in this locality (Birmingham).

Mississippi

R. W. Harned (May 24): Serious damage to cucumbers by the striped cucumber beetle was reported from Bogue Chitto, May 17. This complaint was accompanied by specimens of the insects.

TURNIPS

WAVY-STRIPED FLEA BEETLE (Phyllotreta sinuata Steph.)

North  
Carolina

W. A. Thomas (April 27): During the first week of April the larvae of Phyllotreta sinuata were observed mining the leaves of turnips and mustard in a small home garden at Chadbourn. The attack was so severe that many of the plants were killed. Mature plants in the same garden were less seriously affected, only the lower leaves next to the ground being heavily infested. The adults of this generation began emerging the third week in April and by the last week of the month many of the turnips and adjacent peppergrass were almost covered with the adults of this species. On some of the turnip leaves the insects were so thick that the leaf could scarcely be seen. Much of the foliage was completely skeletonized in a couple of days. A severe dust storm on April 30 dislodged most of the insects from the plants, which were nearly free from the infestation on May 1. By May 3 the insects had returned to the plants in greater number than before the storm.

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Alabama

L. W. Brannon (May 10): This species is doing serious injury to turnips in this locality (Birmingham). Truckers in this district are plowing fields of turnips under because this insect has damaged them to the extent that they are unmarketable.

CABBAGE CURCULIO (Ceutorhynchus rapae Gyll.)

Alabama

L. W. Brannon (May 23): This species was found feeding on mustard and turnips in this locality (Birmingham) on May 3. This insect has not been noticed in this vicinity for the past several years. The insects were not very numerous.

ONION

ONION MAGGOT (Hylemyia antiqua Meig.)

New York

R. G. Palmer (May 2): Onion maggot puparia brought indoors are emerging nicely and show less than 50 per cent parasitism. Outdoors the flies will provably start to emerge this week.

B. G. Cook (May 2): From Genesee, Wyoming County, it was reported that the warm weather of the last two days had brought out the first of the onion maggot flies. Three were found in one of the cages on the 30th.

C. R. Crosby and assistants (May 21): Flies are emerging in large numbers. The first eggs were found on May 17. Growers were advised to make their first application of 2 per cent Bordeaux oil on May 23. Last year considerable damage occurred to onions on muck land near Cherry Creek. This year growers are applying control measures. Many eggs have been laid, and most of the larvae of the first generation have hatched.

Oregon

Don C. Mote (April): Onion maggot adults were first observed in the field on April 13.

IMBRICATED SNOOT BEETLE (Epicaerus imbricatus Say)

Mississippi

R. W. Harned (May 24): Specimens of the imbricated snout beetle, Epicaerus imbricatus, were collected on onions and young bunch beans at Lucedale, April 15.

SWEET POTATO

ARGUS TORTOISE BEETLE (Chelymorpha cassidea Fab.)

Mississippi

R. W. Harned (May 24): Specimens of tortoise beetles belonging to the species Chelymorpha cassidea were collected on sweet potato plants at Learned, Hinds County, recently. The correspondent wrote: "They are working in droves and are eating the potato plants entirely up as they go."



BEETS

CUTWORMS (Noctuidae)

Utah Geo. F. Knowlton (May 17): Cutworms have been doing considerable damage to sugar beets in the Ogden district, but were successfully controlled with poisoned bait.

CLICK BEETLES (Elateridae)

Utah Geo. F. Knowlton (May 17): The adult click-beetles were reported as damaging beets in the Ogden district.

FLEA BEETLES (Halticinae)

Utah Geo. F. Knowlton (May 6): The black flea beetle is damaging young sugar beets south of Salt Lake City and down to Draper. (May 17): Flea beetles are quite numerous this spring at Logan, present in all beet fields examined, but only in exceptional cases are they doing sufficient damage to merit the application of sprays.

RHUBARB

GREEN DOCK BEETLE (Gastroidea cyanea Melsh.)

Oregon Don C. Mote (April): Observed on May 10 feeding on rhubarb at Gervais. Evidently about ready to lay eggs. Newly laid eggs observed on dock at Lake Labish on May 12.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

Florida E. F. Grossman (May 22): Continued hot dry weather has slowed down the emergence rate of the boll weevil from hibernation cages, with 11.01 per cent of 3,123 weevils emerging from 28,437 put up last fall. Though weevils were found in the open fields on cotton seedlings as early as April 27 and quite a wave emerged during the second week in May, field infestation is, at present, at a standstill.

B. R. Coad (Cooperative Report April 16): At several points near College Station, Tex., in 1906, 1907, and 1908 an average of 4.6 per cent of the weevils emerged prior to April 16. In 1925 at College Station, Tex., 3.54 per cent had emerged prior to April 16; in 1926, 2.45 per cent, and this year 3.71 per cent had emerged.

At Florance, S. C., in 1924 prior to April 16, 0.11 per cent of the weevils had emerged; in 1925, 2.49 per cent; in 1926, 0.25 per cent; and this year 2.38 per cent.

In past years at Tallulah, La., the percentage of survival prior to April 16 was as follows: 1.18 per cent in 1916, 0.10 per cent in 1917, 0.02 per cent in 1918, 0.02 per cent in 1919, 0.09 per cent in 1920, 0.80 per cent in 1921, 1.07 per cent in 1922, 0.30 per cent in 1923, 0.04 per cent in 1924, 0.01 per cent in 1925, and 0.03 per cent in 1926. The survival this year to the same date was 0.22 per cent.

It will be noted that a greater survival was recorded prior to April 16 at all the cooperating stations this year than in 1926, where records for comparison are available, except Poplarville, Miss., Experiment Ga., and Baton Rouge, La. Attention is called to the lack of weevil emergence in the two cages at Baton Rouge, La.; this can probably be explained by the fact that they were installed on October 8 and 24 - about six and four weeks, respectively, before a killing frost occurred. Dr. Hinds states that his earliest records have indicated a very light survival among weevils starting hibernation four weeks or more before killing frosts occur and as a rule no survival where hibernation started six weeks before a killing frost. Consequently, he considers that his limited records this spring have no significance as regards field emergence.

A greater survival was recorded this year prior to April 16 than in 1925 at one point in Texas, one in North Carolina, one in Louisiana, one in Alabama, and one in Mississippi, whereas a greater survival was recorded in 1925 at one point in South Carolina, one in North Carolina, one in Louisiana, and one in Georgia.

Records in past years at Tallulah, La., show that an average of 26.49 per cent of the total survival for the season is completed prior to April 16.

#### FLEA BEETLES (Halticinae)

South  
Carolina

C. O. Eddy (May 19): Local attacks of about three species of flea beetles caused damage during the first half of May at least. The upper and lower surface of leaves, especially cotyledon, were eaten.

#### COTTON FLEA (Psallus seriatus Reut.)

South  
Carolina

C. O. Eddy (May 19): Cotton flea hoppers are developing in moderately large numbers on great quantity of evening primrose throughout the Piedmont section. A few of the pests are now active in certain localities on cotton.

Mississippi

R. W. Harned (May 24): Specimens of Psallus seriatus have been collected recently at A. & M. College, on horsemint and croton plants. Specimens of this insect were also collected at Natchez by sweeping with a net in a pasture.

Texas

Press Bulletin Texas Agricultural Experiment Station, College Station (April 15): The numbers of cotton flea hoppers which have emerged or hatched from 6 lots of 100 plants each from first emergence up to above date, inclusive, are given below.

Goatweed .....	22,018
Cotton .....	136
Ragweed .....	336
Horsenettle .....	222
Bitterweed .....	633
Careless weed .....	248

SALT MARSH CATERPILLAR (Estigmene acraea Drury)

Mexico

A. W. Morrill (May 20): This insect, which has been quite destructive on cotton for two years past, seems to have disappeared in the Yaqui Valley.

APHIDAE

South  
Carolina

C. O. Eddy (May 19): Numerous in certain fields before dry weather of May arrived in the Piedmont section.

TOBACCO

WIREWORMS (Elateridae)

North  
Carolina

J. N. Tenhet (May 6): Numerous complaints of wireworm damage at Chadbourn to tobacco are received daily. In some fields the damage varies from 50 per cent to 90 per cent. In one or two fields under observation, resetting has been necessary four times. Wireworms attacking tobacco seem almost entirely to be Monocrepidius sp.

CUTWORMS (Noctuidae)

South  
Carolina

J. O. Pepper (May 9): It has been reported that a 5-acre field of tobacco plants at Hodges has been destroyed by cutworms in Greenwood County.

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

North  
Carolina

Z. P. Metcalf (May 24): The tobacco flea beetle is not especially destructive to tobacco beds this year, but owing to the dry season it has been especially bad on the tobacco transplanted in the field.

Florida

F. S. Chamberlin (May 16): Adults of the spring brood were first noticed on May 11. Infestations appear to be light and little damage has resulted thus far.

SUGAR

SANTO DOMINGO CANE BUTTERFLY (Calisto pulchella Lathy)

Haiti

G. M. Wolcott (May 10): An outbreak of caterpillars of the Santo Domingo cane butterfly, Calisto pulchella Lathy, occurred in the northern part of Haiti between Cap Haitien and Quanimint. I did not observe this in person, but Mr. Fessenden, of the office of the Haitian-American Sugar Company, described the caterpillars and the nature of their injury so well that I have no doubt as to the identity of the insect concerned. Calisto is reasonably common everywhere that cane is grown in Hispaniola, but I have seen or heard of no serious outbreaks since being here, except for the one now reported.

SUGARCANE BEETLE (Euetheola rugiceps Lec.)

Mississippi

R. W. Harned (May 24): The rough-headed cornstalk beetle or sugarcane beetle, Euetheola rugiceps, has been reported from nearly every section of the State during the past month. Apparently this insect is more abundant and is causing more damage this year than during any previous year of which we have record. Packages of these insects with complaints in regard to their injury have been received from correspondents almost every day during the past month.

F O R E S T   A N D   S H A D E - T R E E   I N S E C T S

MISCELLANEOUS FEEDERS

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi

R. W. Harned (May 24): Specimens of weevils collected on Cedrus deodara plants at Wiggins, Jackson, and Meridian, in April were identified by W. S. Fisher of the Bureau of Entomology as Pissodes deodarae. Another generation of these weevils has appeared at Meridian, on Cedrus deodara plants as indicated by specimens received on May 21, from that place. These specimens were tentatively identified by J. G. Hester of our State Plant Board.

PERIODICAL CICADA (Tibicina septendecim L.)

Virginia

W. J. Schoene (May 25): The XVII-year locusts have appeared near Bonsacks just east of Roanoke, Also appearing in large numbers in Augusta County near Stuarts Draft.

A CICADA (Species undetermined)

California

T. D. Urbahns (May 21): Specimens of a cicada were sent to this office for determination with a statement that they were very abundant in the vicinity of Morgan Hill, Santa Clara County,



the larvae emerging from the roots of prune trees and the adults at this time of the year ovipositing in the year-old growth of prune wood. Twigs loaded with fruit break off so that there is considerable loss to the growers in some orchards.

GIANT HICKORY APHID (Longistigma caryae Harr.)

South  
Carolina

J. O. Pepper (May 6): Specimens of this insect have been received from all parts of the Piedmont section. It has been reported as being present on various kinds of trees in abundant numbers.

TURPENTINE BORER (Buprestis apicans Ebst.)

Florida

Monthly Letter of Bureau of Entomology No. 156 (April): In the latter part of March F. C. Craighead and J. A. Beal spent some time on the Choctowhatchee Division of the Florida National Forest, making a preliminary study of the turpentine borer (Buprestis apicans Ebst.). This insect causes serious losses in Longleaf and slash pines after they have been operated for turpentine. The more conservative types of operating adopted by the Forest Service prevent much of this damage, though faces exposed for a number of years are finally attacked.

OYSTER SHELL SCALE (Lepidosaphes ulmi L.)

Illinois

W. P. Flint (May 23): The double-brooded form infesting shade trees began hatching during the week of May 8. The single-brooded form, which is common on ash, lilac, Carolina poplar, and some shrubs, has not yet started to hatch at Urbana.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Arkansas

W. J. Baerg (May 2): Hatching of caterpillars began on May 2 and is still going on. Unless parasites appear, a condition unfavorable to caterpillar development, many trees will be largely defoliated. (May 4): Caterpillars began hatching on May 2. An estimate of their relative numbers can not as yet be made.

Missouri

L. Haseman (April 28): More inquiries than usual regarding bagworms have been received during the month from various sections of the State. The spring brood of worms has not yet developed, but the complaints refer to the cocoons left from last year.

(Dichomeris marginellus Fab.)

North  
Carolina

J. A. Beal (May 18): Dichomeris marginellus was badly infesting a number of junipers during the latter part of April this year at Asheville.

(Blepharida rhois Forst.)

Alabama L. W. Brannon (May 23): This insect is very numerous on sumac in this vicinity (Birmingham). Larvae are appearing and the adults are defoliating the sumac leaves.

BROWN-TAIL MOTH (Nygmia phaeorrhoea Don.)

New Hampshire W. C. O'Kane (May 18): About 800,000 webs of this prime pest are housed in a specially built insectary at Durham in which the caterpillars are being fed in order to permit emergence of any parasites on hand. An investigation is under way to find a suitable spray for use in the spring of the year. This species is the up-curve in New Hampshire once more, after a down-curve through a considerable period of years.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.

New York E. P. Felt (May 24): White-marked tussock moths in clusters are quite numerous in the city and are expected to hatch the last of May (R. E. Horsey).

ARBORVITAE

AN APHID (Dilachmus thujafolia Theob.)

Mississippi R. W. Harned (May 24): Reported on arborvitae at Jackson April 18, at Gulfport April 27, at Tupelo May 3, and at Brookhaven May 15. Identified by A. L. Hamner.

ASH

CARPENTER WORM (Prionoxystus robiniae Peck)

Ohio E. W. Mendenhall (May 12): I find the carpenter borer quite bad in the ash trees, also in shade trees for street planting in the vicinity of Walnut Hills, Cincinnati. The injection of carbon disulphide in the tunnels to destroy the boring larvae might be useful.

BOXELDER

BOXELDER APHID (Periphyllus negundinis Thos.)

Missouri A. C. Burrill (May 18): One tree has leaves falling as per sample enclosed. Damage is severe in spots. (May 20): I find it especially bad on one tree as per sample submitted, where the on tree epidemic had somehow been previously overlooked. It is my judgment that we can not claim this aphid in serious epidemic yet, but as showers fall daily and it is too cold for lady beetles and syrphids to operate; it may become so if this weather continues another week or so.

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

Ohio E. W. Mendenhall (May 20): Found the flat-headed apple tree borer present in some of the boxelder trees on the east side of Columbus.

CYPRESS

CYPRESS MOTH (Cydia sp.)

California T. D. Urbahns (April 18): A. E. Bottel reports cypress moth (Cydia sp.) larvae attacking cypress trees in Riverside County.

PINE

WHITE PINE WEEVIL (Pissodes strobi Peck)

New Hampshire W. C. O'Kane (May 18): Weevils began to appear from hibernation about May 1, but have been slow in showing up in numbers because of cold and rainy days. A study of this insect is under way and interesting details in its life history have come to light.

A SAWFLY (Neodiprion excitans Rohwer)

Mississippi R. W. Harned (May 24): Specimens tentatively identified as Neodiprion excitans were collected on pine at Agricola during the early part of May, 1927.

SOUTHERN PINE SAWYER (Monochamus titillator Fab.)

Mississippi R. W. Harned (April 21): Specimens of Monochamus titillator were collected on pine at Tupelo on April 21, 1927.

RED TURPENTINE BEETLE (Dendroctonus valens Lec.)

North Carolina Monthly Letter of the Bureau of Entomology No. 156, April: Early in April R. A. St. George and J. A. Beal began the summer work at Bent Creek, the location of the field laboratory near Asheville. It was found that low temperatures in the past winter had caused a high mortality in overwintering brood of Dendroctonus valens.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Arkansas W. J. Baerg (May 16): Moths began to appear on May 12. Extent of damage can not be estimated as yet.

GREENHOUSE AND ORNAMENTAL PLANTS

MISCELLANEOUS FEEDERS

A MAY BEETLE (Phyllophaga rugosa Melsh.)

Missouri A. C. Burrill (May 19): Petals chopped, buds eaten, clear into heart so bloom fails to unfold. Honeysuckle leaves for 3 rods or more of vine bank chopped all to pieces (not leaf cutting Megachile this time). Damage 10 to 20 per cent of the blooms at Jefferson City.

LEAF ROLLER (Archips parallela Rob.)

New York E. E. Frane (May 2): An occasional leaf roller has been seen in Dutchess County.

GREENHOUSE LEAF TYER (Phlyctaenia ferrugalis Hbn.)

Pennsylvania H. N. Worthley (May 10): Found all stages. Larvae 1 to 5 per leaf on canna, chrysanthemum, snapdragon, and cineraria. Grower says they attack almost everything but coleus and ferns.

LESSER BULB FLY (Eumeris strigatus Fallen)

Oregon Don C. Mote (April): Lesser bulb flies, Eumeris strigatus Fallen, observed in field on May 25, some mating.

AZALEA LEAF ROLLER (probably Gracilaria azaleella Brants)

New York E. P. Felt (May 24): The azalea leaf roller, probably Gracilaria azaleella Brants, is very scarce (R. E. Horsey).

SNAILS (Mollusca)

New York W. F. Crowell (May 23): In a small greenhouse in Ripley snails have been eating the leaves of the lettuce and dahlias, doing considerable damage, and also attacking peppers.

BOXWOOD LEAF MINER (Monarthropalpus buxi Labou.)

New York E. P. Felt (May 24): The boxwood leaf miner, Monarthropalpus buxi, is somewhat more abundant in Nassau and Suffolk Counties than in previous years. The work is somewhat generally attributed to winter injury (C. H. Zimmer).

CHRYSANTHEMUM

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni Gill.)

Mississippi R. W. Harned (May 24): Macrosiphoniella sanborni on chrysanthemum at McComb, reported on May 5.



EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

North Carolina Z. P. Metcalf (May 24): Young scales are hatching in enormous numbers and attacking Euonymus at Raleigh.

GLADIOLI

STRIPED BLISTER BEETLE (Epicauta vittata Fab.)

Mississippi K. L. Cockerham (May 17): This insect was found feeding on and injuring the blossoms of gladioli at Fruitland Park. Where the blossoms were allowed to remain in the field after opening, the beetles were causing severe injury by eating out and disfiguring the flowers.

LILY

A NOCTUID (Xanthopastis timais Cram.)

Mississippi R. W. Harned (May 24): Specimens of what is very probably Xanthopastis timais Cram. were found injuring lilies at Natchez on May 11.

NARCISSUS

BULB MITE (Rhizoglyphus hyacinthi Boisd.)

io E. W. Mendenhall (May 18): Found them quite numerous on Narcissus bulbs in one of the nurseries in this locality (Dayton).

OLEANDER

OLEANDER APHID (Aphis nerii Fons.)

Mississippi R. W. Harned (May 24): Reported on oleander from Biloxi on April 11. Determination made by A. L. Hamner.

ROSE

AN APHID (Macrosiphum rosaefolium Theob.)

Mississippi R. W. Harned (May 24): Macrosiphum rosaefolium Theob. was reported attacking rose at Tupelo on April 23.

ROSE APHID (Macrosiphum rosae L.)

Missouri A. C. Burrill (May 20): The rose aphid seems to have migrated from its host on which it was sparingly present last month, so that there is no considerable epidemic here (Jefferson City).

ROSE LEAF ROLLER (Archips rosaceana Harr.)

New York

E. P. Felt (May 24): Quite numerous at Rochester since May 10, on hybrid perpetual roses.

DIPLOPODS

Pennsylvania

W. F. Crowell (May 23): An infestation of diplopods at Harbor Creek has been doing considerable damage to bulbs and to rose roots this spring.

ROSE SLUG (Caliroa aethiops Fab.)

North  
Carolina

Z. P. Metcalf (May 24): The rose slug has been especially destructive to climbing roses in the City of Raleigh this year.

CORN ROOT WORM (Diabrotica longicornis Say)

North  
Carolina

Z. P. Metcalf (May 24): The adults have been especially destructive to rosebuds this year; the larvae have done about the same amount of damage to young corn.

SUNFLOWER

CARROT BEETLE (Ligyrus gibbosus DeG.)

South  
Carolina

J. O. Pepper (May 14): Specimens of this insect have been received from Greenwood and Sumter Counties. It is reported that from 8 to 10 adults can be found around the base of each sunflower plant. Many plants have been killed.

VIBURNUM

APHIDIDAE

Utah

Geo. F. Knowlton (May 11): Aphids are damaging snowball bushes at Salt Lake City.

I N S E C T S   A T T A C K I N G   M A N   A N D

D O M E S T I C   A N I M A L S

MAN

A BEDBUG (Haematosiphon inodorus Duges)

New York

E. P. Felt (May 24): Bedbugs provisionally identified as Cimex inodorus were reported by local hospital authorities as a nuisance in galvanized iron cages containing guinea pigs. The bugs were found more commonly near the top of the cage in the crevice between the angle irons and the side of the cage. There was evidently a somewhat serious infestation.

BEDBUGS (Cimex lectularius L.)

Oregon Don C. Mote (April): Bedbugs were reported on April 26 as being numerous in a rooming house.

FLEAS (Siphonaptera)

Georgia O. I. Snapp (May 11): Fleas are more abundant this year than usual, and many complaints have come to the laboratory during the recent weeks.

MOSQUITOES (Culicidae)

Missouri L. Haseman (April 28): Large species not yet identified appeared first in large numbers during the evening of April 27.

MIDGES (Chironomidae)

New York E. P. Felt (May 24): A chironomid was excessively abundant at Nassau Lake, Rensselaer County, the latter part of May, there being literally millions of the small flies in sheltered portions of piazzas and similar places, the walls and roof being literally dark with flies and quartts of dead ones being easily swept up from the floor. The infestation appeared to be somewhat general and was troublesome only on account of the almost overwhelming numbers of the insects.

MORSE

BLACK FLIES (Simulium hirtipes Fries)

New York E. P. Felt (May 24): Black flies, Simulium hirtipes, were somewhat abundant the latter part of May and early in April in the higher pastures of Dutchess, Columbia, and Rensselaer Counties, the flies frequently swarming when there was a lull in the wind and occasionally biting, though in this latter respect they did not compare with the black flies of the Adirondacks.

BUFFALO GNAT (Simulium pecuarum Riley)

California T.D. Urbahns (April 4): W. C. Barber reported that buffalo gnats had appeared in great abundance in Kern County about March 25 and the infestation lasted about ten days. Livestock injury was reported by stock men, but most of the effect was in the form of annoyance to humans.

CATTLE

HORN FLY (Haematobia irritans L.)

Missouri L. Haseman (April 28): During part of the month the horn fly has been rapidly increasing in numbers though it is not yet abundant enough to be particularly annoying to livestock.

POULTRY

CHICKEN MITE (Dermanyssus gallinae Redi)

Missouri

L. Haseman (April 25): The common chicken mite, which is always present in greater or lesser abundance, has begun to attract attention earlier than usual this spring.

TROPICAL FOWL MITE (Liponyssus bursa Berlese)

Missouri

L. Haseman (April 25): A heavy outbreak of a poultry mite identified as the tropical fowl mite has recently developed on a number of farms near Columbia.

EUROPEAN POUFLY FLEA (Ceratophyllus gallinae Schr.)

Connecticut

T. E. Britton (May 27): Poultry manure spread upon garden near the house and fleas were very annoying to the people. Finally house and garden were treated with granular Quicklime and fleas disappeared. Identification is by H. A. Stewart, and is first record for Connecticut of the European poultry flea.

INSECTS INFESTING HOUSES

AND PREMISES

TERMITES

Kansas

J. W. McColloch (May 20): Termites have continued to be an important problem in the State during the past month. Woodwork in houses has been injured at Neodesha, Kincaid, Kansas City, Abilene, Junction City, Tescott, Peabody, Beloit, and Wichita. A business building has suffered damage at Parsons and a garage at Hiaratha. A maple tree has been killed at Kansas City and the ants are working on an osage orange hedge at Peabody. Newspaper reports state that several hundred houses in Kansas City, Mo., and Kansas City, Kan., show injury.

New  
Hampshire

W. C. O'Hane (May 18): Termites, Reticulitermes flavipes Kol., seen to show an increasing abundance and destructiveness in New Hampshire, in spite of the fact that this region is pretty far north. One of the older University buildings shows a basement infestation. One of the new dormitories shows an infestation in basement timbers. The University greenhouses are attacked. Worst of all, the Department of Entomology insectary has been attacked. A greenhouse near Nashua shows damage. In the city of Nashua there has been extensive attack in a large factory building.



ANTS (Formicidae)

Missouri L. Haseman (April 23): Ants are beginning to attract attention in and about homes.

AN ANT (Lasius interjectus Mayr)

Kansas J. W. McColloch (May 1): This ant has been found swarming in houses at Iola, Kansas City, and Manhattan.

HOUSE CRICKET (Gryllus domesticus L.)

New York and Maryland Monthly Letter of the Bureau of Entomology No. 156, April: The finding of Gryllus domesticus in great abundance in Baltimore, New York, and various localities in the eastern part of the United States has been reported, but no specimens have been received for the National Collection. We would like to have a long series of specimens of both sexes in adult and nymphal stages. It may be distinguished from the other species of Gryllus by its generally lighter color and by the two black bands across the forehead.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Kansas J. W. McColloch (May 1): Beetles and larvae are abundant in upholstered furniture in a furniture store at Kansas City, Kan.

A PODURID (Podura aquatica L.)

North Carolina J. O. Pepper (May 11): A bottle of water containing numerous specimens of this insect was sent in from Landrum as being taken from a well in the yard.

STORED-PRODUCT INSECTS

ILLINOIS GRAIN MOTH (Sitotroga cerealella Oliv.)

Kansas J. W. McColloch (May 2): A sample of seed corn received from Topeka was heavily infested with this insect.

DARK MEAL WORM (Tenebrio obscurus Fab.)

Kansas J. W. McColloch (May 6): Larvae of the dark meal worm have been received from Leavenworth, Topeka, and Garnett. In all cases they were working in stored grain.

CADALLE (Tenebroides mauritanicus L.)

Kansas J. W. McColloch (May 7): The cadalle is reported as being very abundant in a granary at Bluff City. The larvae have burrowed into the wood of the bins for pupation. Many of the boards are honey-combed with burrows.



# THE INSECT PEST SURVEY BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR June, 1927

White-grub damage in the upper Great Plains has been quite severe, particularly in Iowa and southeastern Nebraska.

Cutworms have been very troublesome in the Mississippi Valley and Great Plains States. Reports of serious injury have been received from Louisiana, Mississippi, Arkansas, Missouri, Iowa, Kansas, Nebraska, Minnesota, Indiana, and North Carolina. In the Mississippi Delta cutworms are causing very considerable damage on the lands from which the water has recently receded.

Wireworms have been attracting considerable attention in widely scattered regions and on a marked variety of crops. Reports of damage have been received from Montana, Kansas, Nebraska, Minnesota, Indiana, North Carolina, and Virginia.

The Hessian-fly situation remains practically unchanged with the exception of a noticeable increase of infestation in the southern part of Illinois.

The chinch bug has received a very decided setback in the East-Central States from the continued wet weather. On the other hand, in parts of Nebraska the destructive abundance of this insect is very materially increased, and cornfields adjacent to volunteer wheat are suffering severely. Heavy rains have reduced the serious infestations in the eastern half of Kansas.

The plains false wireworm is not generally so troublesome as it has been during the last few years, although reports of damage have been received from Kansas and Nebraska. Another species of false wireworm, Eleodes tricostata, has been found attacking corn in Nebraska. This is apparently the first record of this insect as of economic importance.

The corn ear worm is now occurring in serious numbers in the South Atlantic and Gulf States as well as in southern California. This should be the forerunner of successive ear-worm infestations northward.

The stalk borer is generally prevalent over the entire upper Mississippi Valley. Reports of unusual abundance of the young larvae have been received from Indiana, Illinois, Kansas, Nebraska, and Minnesota.

Very serious damage to corn in the southern part of Mississippi by the lesser corn stalk borer is reported for the first time in several years.

Coincident with the cool, wet weather of this spring, reports of damage by the seed-corn maggot have been received from Montana, South Dakota, Minnesota, Nebraska, Indiana, and Maryland.

The lined stalk borer has been causing considerable injury to corn from western New York to southeastern Minnesota.

The alfalfa weevil was much later in development this year than usual, and though extremely numerous in the fields in Nevada and Utah, it has done comparatively little damage to the first cutting. Cool weather at cutting time will undoubtedly result in very serious damage to the second crop.

An interesting account of very serious damage to alfalfa plants by the larvae of a crane fly has been received from Indiana.

Aphids on deciduous fruit tree, though reported as quite serious in a number of places, do not seem to be abnormally abundant.

The codling-moth situation seems to be slightly more serious in the East-Central States, becoming less troublesome from Illinois westward. In the Pacific Northwest the general situation is very favorable.

The eastern tent caterpillar is still very numerous throughout New England and the Middle Atlantic States.

Preliminary surveys indicate that the plum curculio will be more prevalent in Massachusetts than last year. This same condition prevails southward to Georgia and in parts of Texas.

The Harlequin bug is apparently in usual abundance over the Gulf States. A rather unusual observation was received from Texas where the insect did serious damage to the blossoms of lilac.

The Mexican bean beetle throughout the southern part of its range is appearing in destructive numbers in bean fields.

The boll-weevil situation as observed by the Federal Laboratory at Tallulah La., will not be released in time to be included in this issue of the Survey Bulletin. The June 1 record indicates that greater survival of weevils occurred at all points where observations were made with the exception of Auburn, Ala., Baton Rouge, La., and Experiment, Ga. Reports from North Carolina indicate that survival was unusually heavy. Similar records have been received from practically all sections of Mississippi with the exception of the Delta region.

The cotton flea hopper is generally not very abundant in the cotton fields, although present in large numbers on other plants. Some damage was reported from North Carolina.

Only one report, and that doubtful, of the cotton leaf worm has been received so far this year, and that from Tennessee.

The periodical cicada is appearing in very limited numbers in parts of West Virginia. Some heretofore unrecorded localities have been observed this season.

Considerable trouble from the white-marked tussock moth is anticipated in western New York, in Ohio, and in Indiana.

The Mexican bean beetle has been discovered on the government farm at Arlington, Virginia, adjacent to Washington, D. C.

The fall cankerworm seems to be in epidemic abundance in the New England States, New Jersey, and Pennsylvania. In the last State the infestation is reported as the worst observed in the past 40 years.

Aphids on maples are extremely abundant in Ohio and Indiana, where they are causing considerable annoyance in the cities by heavy excretions of honeydew.

Several cases of tularaemia, two of which terminated fatally, have been reported from Arkansas.

Screw-worm conditions are considerably worse than usual for this time of the year in parts of Texas, occasioning heavy losses of lambs and young calves.

White ants continue to be a serious feature in the maintenance of wooden structures over a wide area. Reports range from Indiana to Nebraska and southward to Kansas.

An unusual household pest in the form of a pemphredonid wasp is reported as damaging porch flooring in Mississippi.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR JUNE, 1927

New severe outbreaks of the European apple sucker have appeared between Berwick and Middleton, Nova Scotia, some apple orchards being 100 per cent infested. Recently, the insect was also found on Prince Edward Island.

The green peach aphid, Myzus persicae Sulz., was exceedingly prevalent in the southern Okanagan Valley, British Columbia, this spring, being particularly destructive to blooms and young fruits.

There is a widespread and rather heavy infestation of the rose leaf hopper in western Nova Scotia, affecting roses and apple.

Large numbers of the predacious mite Hemisarcoptes malus Shimer have been found on trees infested with oyster-shell scale, in the Coldstream district, British Columbia. This mite is believed to be an important factor in the control of the scale in the Okanagan Valley.

Strawberry leaf-rollers caused considerable damage to the foliage and blossom buds of strawberries in sections of the Okanagan Valley, this spring.

The fall cankerworm has infested 75 per cent of the apple orchards in the Annapolis Valley, and the Fictou district, Nova Scotia, causing severe defoliation in untreated orchards. The infestation, which has been increasing in intensity during the past few years, is now probably at its maximum.

The eye-spotted bud-moth, Spilonota ocellana D. & S., is infesting a much larger area in the Annapolis Valley than during any previous season, and the intensity of infestation is the greatest so far experienced.

White grubs caused considerable injury to roots of young fruit trees at Edgewood, British Columbia. They have also been reported as unusually abundant in the Treeshank district, Manitoba.

The beetle Hylastinus obscurus Marsh, was taken early this spring in roots of red clover in The Grindrod district, British Columbia, where it was causing severe damage to clover.

Spittle insects have been reported in unusual abundance on grasses and garden plants, over a considerable territory in southern Ontario.

An arthropod, Scutigera immaculata, belonging to the class Symphyla, has been causing serious damage to young mangels in the Victoria district, British Columbia, where it is becoming a pest of increasing importance.

A species of cedar tip borer is generally infesting white cedars throughout New Brunswick. The heaviest infestations were noted in Kings County, where cedars over a considerable area have been largely defoliated.

Large areas of balsam are reported dead or dying on Hunters Range, northeast of Mara, British Columbia, as a result of the attacks of a bark beetle, Dryocoetes confusus Sw.

The early aspen leaf curler, Exentera oregonana Wlshn., has severely infested the foliage of poplars, in south-central Saskatchewan, many trees having 50 per cent of their leaves curled.

The elm bark louse is reported for the first time in outbreak form at Powell River, British Columbia.



GENERAL FIELDERS

GRASSHOPPERS (Acrididae)

Nebraska H. H. Swenk (May 25-June 25): Grasshoppers are distinctly sub-normal in abundance over the State according to information obtained up to this time.

MORMON CRICKET (Anabrus simplex Hald.)

Montana W. B. Mabee (June 17): Mormon crickets are more abundant than they were last season. They are about three weeks later in their development owing to the late spring conditions. To date we have been able to protect cultivated areas, the only damage so far being to range land.

WHITE GRUBS (Phyllophaga spp.)

Massachusetts A. I. Bourne (June 20): The first May beetles were noticed May 3 to 4. These have been unusually scarce this season.

Wisconsin C. F. Ainslie (June 3): The larvae of the beetles are everywhere in evidence this spring, and promise great injury to young corn as well as gardens. Very few adults have flown as yet. Probably hindered from emerging by continued cool nights. The larvae are of two broods, large and medium sized.

Nebraska H. H. Swenk (April 25-May 25): During the entire period covered by this report there have been a great many complaints of damage by white grubs in southern Nebraska. Some of these relate to injury in gardens, but most of them are complaints of injury to strawberry beds and to privet hedges. Damage of this sort has been reported as far to the west as Harlan and Furnas Counties and is still in progress. (May 25-June 25): Complaints of damage by white grubs in southern Nebraska continued to be received until toward the middle of June. These relate chiefly to injuries to strawberry beds.

MARCH FLY (Bibio albipennis Loew )

Nebraska H. H. Swenk (April 25-May 25): During the third week in May an abundance of the March fly, Bibio albipennis, was reported from Kearney and Buffalo Counties. The insects occurred by the thousands in the field, causing inquiries from farmers as to prospective injury of some sort to crops.

OUTWORMS (Noctuidae)

Illinois C. F. Ainslie (June 3): Outworms are extremely numerous in north-western Iowa this spring, and are doing widespread injury to both garden plants and field crops. The identity of the species involved has not been established, but it is quite certain that

several species are represented. Many gardens have been practically ruined by these worms.

Missouri

A. C. Burrill (June 10): Cutworms have not been noticeable this spring.

Mississippi

R. W. Harned (June 22): Cutworms have caused considerable damage in the flooded section of the Delta. Some fields of cotton and corn have been replanted twice, and even three times in a few cases. Observations and collections by State Plant Board inspectors show that the most abundant and widely distributed species is the greasy cutworm, Agrotis ypsilon Rott. The yellow-striped armyworm or cotton boll cutworm, Prodenia ornithogalli, has also been found in injurious numbers. A severe outbreak of the southern grass worm, or fall armyworm, Laphygma frugiperda, has occurred in Yazoo City, and preparations are being made to fight the succeeding generations. Little or no parasitism was observed.

#### WIREWORMS (Elateridae)

Montana

W. B. Mabey (June 17): Wireworms are abundant this season, considerably more complaints having been received to date than last year.

#### SPITTLE INSECTS (Cercopidae)

Missouri

A. C. Burrill (May 31): Cercopid nymphs, greenish stage, are often more than 3 per square foot where grass is not cut, as in pastures and fence rows. This is about the thickest I have ever noticed them at this time of the year. Probably this is because of the unusually wet season.

#### CEREAL AND STORAGE-CROP INSECTS

##### WHEAT

##### HESSIAN FLY (Phytothaga destructor Say)

Illinois

W. P. Flint (June 20): The Hessian fly has increased somewhat in the southern part of the State, but from present information it has not become more abundant in the central or northern sections.

Nebraska

H. H. Swenk (May 25-June 25): The Hessian fly, probably largely as a result of the continued general observance by wheat growers of the practice of reasonably delayed sowing, has apparently not been able to build up an abundance productive of commercial damage on the winter wheat crop of 1926-27, now in the making. At least so far this spring only one instance of noticeable damage by this pest has been reported, that being in Johnson County near Tecumseh.

ansas

J. W. McColloch (June 20): We have made a thorough survey throughout the wheat belt and find the Hessian fly serious in 30 south-central counties of the State. In Ellsworth County  $\frac{3}{4}$  per cent of the stems were broken over on June 8. Many fields in the area show 10 to 25 per cent broken straw.

CHINCH BUG (Blissus leucopterus Say)

Illinois

W. P. Flint (June 20): June has been, on the whole, a very wet month, and the areas which were quite heavily infested with chinch bugs last season are now more nearly free from this insect than has been the case for a number of years. The chinch bug on the whole has received a very severe setback this season.

outh  
Carolina

J. O. Pepper (June 10): The infestation of this insect in the Piedmont section is increasing rapidly. Some small areas in cornfields have already been seriously injured. The majority of infestations have started from near-by grain fields that have been harvested.

Nebraska

M. H. Swenk (May 25-June 25): The cool, wet spring slowed up the progress of the first brood of the chinch bug in southeastern Nebraska, and no doubt a large percentage of the brood has succumbed to the continued unfavorable weather conditions. Nevertheless, there remain plenty of chinch bugs in many fields of winter wheat that will probably be heard from when the fields are cut next month. Up to this time the most serious injury by the chinch bug has taken place in connection with young corn that was planted on ground that was in wheat last year, and where a heavy growth of volunteer wheat furnished food and good cover during the past winter. In a number of instances such corn is now heavily attacked by young bugs, and the plants have been stunted and in some fields quite killed out by the attacks of the growing young bugs.

ansas

J. W. McColloch (June 20): There is a general infestation of the chinch bug over the eastern half of the State. The situation appeared very serious a few weeks ago, but cool weather with abundant rain has improved conditions.

WHEAT STEM MAGGOT (Meromyza americana Fitch)

Nebraska

M. H. Swenk (May 25-June 25): Some injury by the wheat stem maggot was reported from Phelps County about the middle of June.

GREEN BUG (Toxoptera graminum Rond.)

Minnesota

F. M. Wadley (June 16): The green bug became very scarce after last summer's outbreak, owing to enemies, food scarcity, and unfavorable weather. It continued to decrease through the fall, though still existing in spots. No eggs were found, and no green bugs are now present in spots where they were living last

fall. None have been found this spring in any situation. Experiments show that wintering here by live aphids would be impossible, and by eggs unlikely.

FLAINS FALSE WIREWORM: (Eleodes opaca Say)

Kansas

J. W. McColloch (June 20): Adults of the false wireworm were found very abundant in the wheat fields at Hays on June 8. Beetles were also reported abundant at Ulysses on May 25.

ARMY CUTWORM (Chorizagrotis auxiliaris Grote)

Nebraska

H. H. Swenk (April 25-May 25): As was briefly reported last month, the army cutworm was responsible for serious damage to winter wheat and alfalfa during the period covered by that report (March 15-April 25). The complaints of such injury came from an area extending from Dawes, Perkins, and Furnas Counties on the west to Antelope and Buckells Counties on the east, the westernmost complaints being mostly of injury to winter wheat, while those from the more southern and eastern localities were of injury to alfalfa, especially to young alfalfa that was seeded last fall. Along with the larger, more nearly matured army cutworms, there occurred also large numbers of younger cutworms, half-grown or less, of the dark-sided cutworm (Euxoa messoria). During the month of May these dark-sided cutworms continued their development on the alfalfa, and with these and two species of Euxoa, injury in the alfalfa fields has been continuous from early April (8) to the fourth week in May (22). The younger and weaker fields seeded last fall have been injured, many of them having been destroyed, but in many cases larger and older fields have also been more or less stripped of their leaves. The center of this injury is in the area enclosed by Antelope, Greeley, and Madison Counties, but it extends west to Cherry County and south to Merrick and Hall Counties. Together, hundreds of acres of alfalfa have been injured by these cutworms during the period covered by this report.

Nebraska

H. H. Swenk (May 25-June 25): As a result of the outbreak of the army cutworm, Euxoa auxiliaris, during the last half of March and the month of April, fairly heavy flights of the adult moths appeared about the first of June over the infested area, and eastward over the State.

Montana

T. B. Mabey (June 17): There has been a very general infestation by this insect practically clear across central Montana. There has been very little actual damage as the crops were late and the cutworms began pupating before much damage could be done; however, in one place near Hardin one 300-acre field of flax was eaten off, and a 500-acre field of winter wheat was seriously injured. The flax, however, is sending up new shoots and will probably not be a total loss.



ARMYWORM (Cirphis unipuncta Haw.)

Missouri L. Haseman (June 4): Local epidemics of the armyworm have been reported from Jackson and Scott Counties.

Nebraska H. H. Srenk (May 25-June 25): The armyworm was reported on June 22 as having badly injured 30 acres of a field of winter wheat in Fillmore County. Owing to the abnormally cool character of the spring other reports of injury by the armyworm are expected during the next few weeks.

WHEAT-HEAD ARMYWORM (Neleucania albilinea Hübner.)

Kansas J. W. McCulloch (June 21): The wheat-head armyworm has caused considerable damage in many fields over the State. At Manhattan the worms have been heavily parasitised by Apanteles militaris. A few tachinids are now showing up. Counties in which infestation is found: Brown, Riley, Saline, Edwards, and Sedgwick.

WHEAT JOINT WORM (Harmolita tritici Fitch)

Illinois W. P. Flint (June 20): S. C. Chandler reports the wheat joint worm less abundant in southern Illinois than it has been for several years.

WIREWORMS (Elateridae)

Indiana J. J. Davis (June 2): Wireworms caused severe injury to wheat at Columbus April 23.

SMUT BEETLE (Phalacrus politus Melsh.)

Kansas J. W. McCulloch (June 15): Specimens of this beetle were received from Peabody with the information that they were very abundant in the beards of wheat affected with smut.

CORN

CORN EAR WORM (Heliothis obsoleta Fab.)

South Carolina J. O. Pepper (May 28): The corn ear worm has been doing serious damage to early planted corn in Georgetown County.

Mississippi R. W. Harned (June 22): Specimens of the corn ear worm or tomato fruit worm have been collected recently on corn at Indianola, Holly Springs, Prentiss, and Russell. Very serious damage by this insect to tomatoes was reported on two farms at Ocean Springs during the early part of June. A complaint in regard to injury by this species to tomatoe was received from Orange Grove on May 27.

SOUTHERN CORN STALK BORER (Diatraea zeacolella Dyar)

North Carolina J. N. Tenhet (June 21): Infestation at present is approximately 50 per cent of a 20-acre field. Damage at present impossible to estimate, but probably negligible. If severe winds occur, however, before corn is harvested, injury will be very severe.

STALK BORER (Papaipema nebris nitela Guen.)

Indiana J. J. Davis (June 24): The stalk borer was first reported from Edinburg as attacking potatoes June 11. Since that date reports have been received from LaPorte, Burlington, Amo, Danville, Seymour, LaFayette, Brownsburg, Russiaville, New Ross, Indianapolis, and Crawfordsville, where it has been reported as attacking corn. At Indianapolis notable damage to tomatoes was reported. Apparently this borer is rather widespread throughout the State. The lateness of the corn and small size of the borers at the present time indicate that considerable damage will result. This borer is becoming an annual pest and should emphasize the importance of better farm practices.

Illinois W. P. Flint (June 20): The small larvae of this insect are being sent in from all parts of the State with reports that they are causing considerable damage to corn. All larvae received thus far have been less than one-third grown.

Kansas J. W. McColloch (June 20): There has been a general outbreak of the stalk borer in Kansas this month. Injury to corn reported from Auburn, Moran, Marysville, Manhattan, Wellington, Strawn, Udall, and Leavenworth. The worms are taking the corn in some fields. Ornamentals are infested at Newton and sweet potatoes at Kiowa.

Minnesota C. E. Mickel (June 16): In one county in the southeastern part of the State there have been several reports on the injury to corn by a larva closely related to Papaipema nitela. The larva attacks the corn plant when 3 or 4 inches high, bores into the stalk, and works downward toward the roots of the plant.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Mississippi R. W. Harned (June 22): Serious damage by the lesser corn stalk borer has been reported from Jackson, Pearl River County, and from Newton, Monroe, and Lauderdale Counties. Corn is the principal crop injured, although in some instances serious damage was reported to compeas and sugarcane.

CUTWORMS (Noctuidae)

Nebraska M. H. Swenk (May 25-June 25): During the present spring there has been more destruction of young corn by the several common species of cutworms that are frequently responsible for this sort of injury than during any spring since 1912. The protracted

subnormal temperatures have slowed up both the growth of the corn and of the cutworms so that the latter have continued their depredations throughout the period covered by this report. A very great amount of replanting has had to be done for this reason, this sometimes involving the greater part of large fields and undoubtedly aggregating many thousands of acres of corn in the State as a whole. The species that have been most prominent are Luxoa messoria, Feltia ducens, and Feltia venerabilis. Where fields of alfalfa were adjacent to corn there was a considerable migration of cutworms from the alfalfa to the corn during the first 10 days in June, since which time there have been no complaints of further cutworm injury in the alfalfa fields. Although injury by cutworms to young corn has been general throughout the State, apparently the most severe corn cutting by these pests has occurred in the northeastern section of the State, that is, the portion lying north of the 40th parallel and east of the 99th meridian.

ansas J. W. McColloch (June 20): Injury to corn by cutworms has been reported as follows: Webber, May 28; Elling, June 2; Madison, June 6; all have replanted three times; Manhattan, June 7, has replanted once.

rkansas J. K. Gibson (June 16): Overflow worms are eating corn planted after overflow. When the corn sprouts they eat it.

APPLE TWIG BORER (Amphicerus bicaudatus Say)

braska H. H. Swenk (April 25-May 25): During the first week in May, specimens of corn stalks that showed heavy borings by Schistoceros hamatus were sent in from Douglas County. Some of the beetles were found in the burrowings. This is the first time we have ever found this common beetle burrowing in cornstalks.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

aryland E. H. Walrath (May 28): Several fields of corn will have to be replanted completely near Uniontown on account of this pest.

outh  
Dakota H. C. Severin (June 1): Severe damage to corn by the seed corn maggot is reported from Carter, Artesian, Hayti, and Howard. The season is very cool and backward. (June 5): There is 50 per cent injury to some cornfields near Burke, Manchester, and Wolsey.

braska H. H. Swenk (April 25-May 25): The seed corn maggot has been reported as seriously injurious to planted corn in certain parts of Merrick County during the month of May. (May 25-June 25): The seed corn maggot, under the influence of the cool, wet spring, continued to be injurious to recently planted sprouting corn, in the more western parts of the State during the first half of June. Some of these reports are from localities farther west than have

previously experienced attacks by this insect, these including instances of serious injury as far west as eastern Cherry County and western Hayes County.

Minnesota

C. E. Mickel (June 16): The seed corn maggot is causing considerable injury to planted corn in the southern and western parts of the State. A number of fields have had to be replanted and there are also scattering reports of injury by this insect to planted seed pieces of potatoes.

STINK BUGS (*Coreidae* and *Pentatomidae*)

Louisiana

Chas. E. Smith & Norman Allen (June 11): Of the stink bugs which attacked corn, Euschistus servus was the most numerous species, from 6 to 12 on a single tassel being common. Next came Leptoglossus phyllopus L., Nezara viridula L., Euschistus ictericus L., and Euschistus tristigmus Say var. pyrrhocerus H.-S., respectively. Up to this time their attack has been confined almost entirely to the tassels of the corn, some of which have been killed prematurely, apparently. However, a few were observed feeding on the stalks below, especially on or near the shank of the ear.

CORN LEAF APHID (Aphis maidis Fitch)

Mississippi

R. W. Harned (June 22): Aphis maidis on corn received from Yazoo City on May 27, and determined by A. L. Hamner.

LINED CORN BORER (Hadena fractilinea Grote)

New York

E. P. Felt (June 24): Injury by the lined corn borer was reported June 20 and 21 from localities in Oneida and Rensselaer Counties.

Ohio

T. H. Parks (June 22): This lined stalk borer was sent in from Jefferson County with the statement that it was causing considerable damage to young corn by boring in the heart of the stalk and causing it to die. Infested fields were in sod last year. Have not had serious damage from this borer in corn since 1919, though specimens were received in 1918 and 1921.

Minnesota

C. E. Mickel (June 24): The lined stalk borer has been causing injury to corn in the southeastern counties. The injury seems to be centered in Fairmont County, although reports have been received from a number of counties to the north and west. The loss is estimated to be about 10 to 15 per cent of the planting. The larvae at the present date are almost full-grown, and it is not expected the injury will continue much longer.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Indiana

J. J. Davis (June 24): The twelve-spotted corn root worm beetle was reported feeding abundantly on young corn plants at Kitchel June 18.



WIREWORMS (Elateridae)

ansas J. W. McColloch (June 15): Injury to corn has been reported from Madison, Eureka, and Scammon.

nnnesota C. E. Mickel (June 16): Wireworms are causing some damage to planted corn in one county in the western part of the State.

A WIREWORM (Monocrepidius vespertinus Fab.)

orth Carolina J. H. Tenhet (June 23): Adults are now present in large numbers in leaf sheaths of corn. No damage to corn can be noticed. This is the adult of the wireworm seriously injuring tobacco in the eastern Carolina bright-tobacco section.

UPLAND CORN WIREWORM (Melanotus vilosus Blatch.)

braska H. H. Swenk (April 25-May 25): The upland wireworm was reported to be destroying the kernels of newly and early planted corn during the last few days in April, in Adams County, and also as doing much damage to fields of wheat in Sheridan County about the middle of May, by consuming the roots of the plants.

PLAINS FALSE WIREWORM (Eleodes opaca Say)

braska H. H. Swenk (May 25-June 25): An instance of injury to young corn by the plains false wireworm came to our notice from Saline County, near Wilbur during the last week in May.

A FALSE WIREWORM (Eleodes tricostrata Say)

braska H. H. Swenk (May 25-June 25): During the second week in June the false wireworm Eleodes tricostrata was found attacking young corn in Cherry County, this being the first time we have found this species doing serious damage to corn in this State.

IMBRICATED SNOUT BEETLE (Epicaerus imbricatus Say)

braska H. H. Swenk (May 25-June 25): On June 6 a correspondent in Hall County reported that an abundance of the imbricated snout beetle was present in his cornfield, and that the beetles were cutting off the young plants at the top of the ground as they came up, doing serious damage.

ALFALFA

PEA APHID (Illinoia pisi Kalt.)

braska H. H. Swenk (May 25-June 25): The pea aphid was quite plenti-

ful in alfalfa fields in southeastern Nebraska during the last few days in May and the early part of June, and in some cases young alfalfa, seeded last fall, was attacked sufficiently heavily to be destroyed.

Mississippi R. W. Harned (June 22): On vetch received from Meridian May 20. Identification by A. L. Hamner.

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Nevada G. G. Schweis (June 2): The season is three weeks later than normal because of the cold, rainy weather. Alfalfa shorter than usual for this season because of aphid injury and cold weather.

Utah K. Sakimura (June 5): The alfalfa weevil is very abundant in this district, especially in the northern part of Delta. The infestation extends widely and the most part of alfalfa fields are injured. The tops appear gray from a distance. In one instance 10 or more larvae were found on one stem. All larvae are vigorously eating leaves now. One-half of the number is full-grown size. The hay is not growing because of the delayed warm weather and exceptional abundance of weevils, and the crop will be reduced in a great degree. Weevils are more abundant than last year; all growers say that there is an exceptional abundance this season.

CLOVER LEAFHOPPER (Agallia sanguinolenta Prov.)

Nebraska H. H. Swenk (May 25-June 25): During the first two weeks in June the clover leafhopper and other species were present in injurious abundance in the alfalfa fields of Dawson and adjacent counties in central Nebraska.

A CRANE FLY (Tipulidae)

Indiana J. J. Davis (June 2): A rather interesting report of damage to alfalfa by crane fly larvae, Tipulidae, came from Goshen May 9. A number of fields were seriously damaged. The field in which the greatest amount of damage occurred has been in alfalfa continuously for six years. There was also considerable blue grass scattered in the field. In this field from 2 to 3 acres were completely destroyed and more or less damage was done all over the field of 12 acres. Last year this farmer experienced similar injury and plowed up about 2 acres where damage was greatest. Larvae were found in large numbers about the crown of the plant and the roots, both being girdled. The plants that had been killed for some time could be pulled out of the ground easily.

CLOVER

PEA APHID (Illinoia pisi Kalt.)

Illinois W. P. Flint (June 20): The pea aphid is abundant on clover throughout central and southern Illinois, but is not causing any damage.

Missouri A. C. Durrill (May 31): A scattering few of Macrosiphum pisi now appear on leaves of red clover in blossom, but aphids have left the rose and elder tree.

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

Indiana J. J. Davis (June 2): The clover leaf weevil, Hypera punctata, reported damaging sweet clover at Saratoga and Portland May 19 and 20 respectively.

CLOVER BUD WEEVIL (Phytonomus nigrirostris Fab.)

Illinois W. P. Flint (June 20): J. H. Digger reports adults of the clover bud weevil emerging in large numbers during the week of June 13.

# FRUIT INSECTS

## GENERAL

### APHIDIIDAE

#### New York

E. P. Felt (June 24): Various plant lice have been abundant during the past two weeks on elms, maples, and lindens and the rosy aphid somewhat numerous upon apple trees in various sections of the State. The woolly elm leaf aphid has also been abundant in some localities. Plant lice are very numerous on tea and hybrid perpetual roses at Rochester and other species upon a number of trees and shrubs (R. E. Horsey).

#### Indiana

J. J. Davis (June 2): Apple aphids have not shown up very abundant. At Bedford, April 10, stem mothers and a few young of Aphis avenae were present on almost every cluster and likewise with every aphid colony was an egg or larva of a syrphid, Syrphus americana. When the same orchard was visited again, May 2 and again May 20, the aphids of this species were practically eliminated. On April 10 in the same orchard a single stem mother of the rosy apple aphid was observed. On May 22 occasional clusters were to be found, and apparently the first winged form appeared that day. (June 24): Probably the most conspicuous outbreak of the month is the comeback by Aphididae. Aphids are exceedingly abundant everywhere and on everything. The rosy apple aphid is spotted according to our observations, but the green apple aphid occurs in large numbers. They are especially destructive to young trees and small trees which were top-worked following the severe blight damage last year. Cherry is also heavily infested with the black cherry aphid. Shade trees of many kinds are infested and include linden, boxelder, and maples.

#### Missouri

A. C. Burrill (May 31): The brown aphid on grapevines is epidemic, just as the brown plum aphid, previously reported, continues in quite serious epidemic, also some black aphid on shepherd's-purse. (June 10): Syrphids and lady beetles are not attacking plant lice generally.

## APPLE

### APPLE APHID (Aphis pomi DeG.)

#### Connecticut

M. P. Zappe (June 22): Coccinellid larvae and syrphid larvae are not present in sufficient numbers to hold aphids in check. It is early in the season and not very many aphids are present but they have been increasing rapidly in the last few weeks.

#### Illinois

W. P. Flint (June 20): The green apple aphid is quite abundant in the southern and central sections of the State. It is causing some damage to nurseries.



ROSY APPLE APHID (Anuraphis roseus Baker)

ecticut M. P. Zappe (June, 1927): These have increased rather fast since early spring. More abundant than usual with coccinellids and syrphid parasites present.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

ana J. J. Davis (June 24): The woolly apple aphid is very abundant in orchards of southern Indiana. This is especially noticeable in breaks and cuts on the branches of small trees where injured earlier in the season by hail.

CODLING MOTH (Carpocapsa pomonella L.)

E. W. Mendenhall (June 17): Codling moth adults are emerging in large numbers at Columbus. The arsenate of lead spray should be put on now.

ana J. J. Davis (June 2): The codling moth situation is again serious. Winter mortality was apparently negligible. First moths were observed at Bedford May 2. L. F. Steiner observed the first eggs at Bedford May 9, but none hatched until May 21, owing to cool rainy weather. B. A. Porter observed first larvae at Vincennes, May 20.

The freeze destroyed a large percentage of the apples in southern Indiana and many orchardists are neglecting their regular sprays. It is a question, therefore, whether the scarcity of fruit will materially lessen the codling moth menace for the next year. (June 24): The codling moth situation is serious in southern Indiana. Emergence extended over a long period because of cool weather and as a result there will be no distinct period between hatching of first-brood worms and those of the second brood.

nois W. P. Flint (June 20): Adults of the overwintering brood of the codling moth have practically ceased to emerge in southern and central Illinois. Emergence took place over a long period and comparatively few eggs were laid owing to the cool nights. Up to June 10 it was very difficult to find apples showing entrances. Mr. Chandler took the first larvae under bands in southern Illinois during the week of June 13. Most commercial orchards are very free from injury by this insect up to this date.

ouri A. C. Burrill (June 21): There seems to be little codling moth noted in this river valley section.

as R. L. Parker (June 20): About 50 per cent mortality over winter in the orchard region near Troy. Better control is expected this year since the weather is not so dry and hot. This pest wintered over very successfully about Wichita. It emerged with slight mortality. At Belle Plaine south of here it is a continuous round of spraying to partially control this insect.

Montana

W. B. Mabey (June 17): On June 3 overwintering larvae and some pupae were found in the orchard home section near Missoula. Living specimens were considerably easier to find than usual at this season.

Washington

E. J. Newcomer (June 1): First adults of the codling moth were observed May 4. Continued cool weather during the latter half of May has prevented oviposition, and this, together with some winter mortality, should make the codling moth a less serious pest in the Pacific Northwest this year than for several years past. Unfavorable weather has made it difficult for growers to apply the calyx spray at the right time. The first favorable weather for oviposition of any consequence occurred May 31 and June 1.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

Maine

J. V. Schaffner Jr. (June 31): A collection of larvae of the apple and thorn skeletonizer was sent in June 20 from Glenburn, by Quarantine Inspector A. C. Ward. He reports that they are plentiful on apple in this locality.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

New England  
States

J. V. Schaffner Jr. (June 17): Forty-eight reports received from various localities throughout New England seem to indicate that the infestations are spotty. Have noticed in some of the towns in eastern Massachusetts heavy infestations in one part of the town and very light in other parts.

Connecticut

M. P. Zappe (June): Many larvae show tachinid eggs. Many larvae also dying of wilt disease.

Massachusetts

A. I. Bourne (June 20): The apple tent caterpillar has been about as abundant as last year. No appreciable increase in abundance has been reported from any section. If anything, there has been a slight decrease in their numbers. At the time of our April report, I gave some preliminary figures relative to parasitism. Since that time we have drawn deductions of counts from about 13,000 eggs of this insect and found that the average parasitism for this number was 7.22 per cent. The egg masses showed an average hatch of between 85 and 86 per cent. The amount of parasitism was found to vary considerably according to egg masses, ranging from 0 up to 27 or 28 per cent. From the average percentage of parasitism, however, it would not appear that we could depend on the natural enemies of this insect to reduce it materially by the next season. The larvae had, by early June, for the most part, completed feeding and had begun to crawl about. The first cocoons were noted about the 12th to 14th.

New York

E. P. Felt (June 24): The apple tent caterpillar, Malacosoma americana, is reported as numerous throughout Monroe County, completely stripped trees being seen (Wm. L. G. Edson). This insect is apparently more common than ever in this section (R. E. Horsey).

Jersey D.W. Webb (April 17): Small damage to wild cherry at Pennington and Lawrenceville in Mercer County. First noticed on April 17.

C. J. Grant (May 12): Slight damage to apple and wild cherry at Middlebush.

TENT CATERPILLAR (Malacosoma sp. (pluvialis Dyar ?)

gon H. Sargent (June 7): I have just collected a small nest of a rather common species of tent caterpillar in the apple orchard on the Patton and Brown ranch, which lies just west of the Lewis and Clark River and north of Fort Clatsop. I noticed quite a number of caterpillars of this kind in the orchard. This insect is now gregariously defoliating the apple trees.

APPLE LEAFHOPPER (Empoasca mali LeB.)

sachusetts A. I. Bourne (June 20): Apple leafhoppers have been reported, particularly from Connecticut Valley orchards, as decidedly more abundant than during the last two or three years. They proved especially troublesome in those orchards where growers for some reason or other had neglected to include nicotine in the calyx spray. Where nicotine was used, although the insects had made considerable start, they had been satisfactorily controlled.

ana J. J. Davis (June 24): Leafhoppers, Empoasca mali, have been severe on apple this season, and in some cases have done more damage than the green apple aphid.

PLUM CURCULIO (Conotrachelus nemoralis Hbst.)

sachusetts A. I. Bourne (June 20): Mr. Whitcomb reported the first collection of beetles, in his jarring experiments, on May 17. The numbers collected at that time indicated that the pest would be more abundant than in 1926. A later report from him, under date of June 15, states that the insect is unusually abundant this season and that many growers are reporting to him 50 to 60 per cent of their apples stung. I may say here that this report is borne out by our own observations in the western part of the State. Mr. Whitcomb reported collecting several specimens of apple curculio in his nets when jarring for the plum curculio.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

as E. L. Parker (June 20): This insect causes a heavy June drop and later in the summer causes the ripe apples to assume a pepperbox appearance. The ordinary codling moth spray does not control the insect.

OSYLER-SHELL SCALE (Lepidosaphes ulmi L.)

York A. D. Felt (June 24): Young scales were crawling at Rochester on warm, sunny slopes June 11, though not until four or five days later in cooler localities. There is a considerable amount of this scale on ash trees (F. L. Horsey).



Indiana

J. J. Davis (June 2): The oyster-shell scale is abundant as usual in the northern half of the State. Recent reports record it as occurring abundantly on poplar, lilac, quaking aspen, soft maple, and apple. Eggs were first observed hatching at Lafayette May 31 and probably began a day or two before.

Nebraska

M.H. Swenk (Apr. 25 - May 25): About the usual number of complaints relative to the oyster-shell scale were received during the period covered by this report. (May 25 to June 25) The usual number of complaints for this insect received during this period.

Montana

W. B. Mabey (June 17): The oyster-shell scale is very abundant, especially where no dormant oil spray has been applied.

A Correction

Harold Morrison (June 14): Identification of scurfy scale by Harold Morrison, collected on black gum in North Carolina and sent in by Mr. Z. P. Metcalf, proved to be Chionaspis sylvatica Saunders instead of Chionaspis furfura Fitch as reported in the Insect Pest Survey Bulletin, May 1, 1927, p. 63.

EUROPEAN RED MITE (Paratetranychus pilosus Can. & Fanz.)

Massachusetts

A. I. Bourne (June 20): The first reports of hatching were April 26-28. These mites have been very abundant in some orchards in spite of the fact that oil sprays were used in the spring of 1926 with apparently good results. Evidently reinfestation took place on a considerable scale last fall. This was particularly noticeable in certain blocks in the college orchard which had not been given the regular summer sprays of lime-sulphur.

Connecticut

M. P. Zappe (June, 1927): The European red mite is very scarce where trees had a delayed dormant spray of a miscible oil. Trees that had no delayed dormant spray have many mites present, especially the Baldwin variety. Adults and larvae of Delphastus pusillus Lec. are present.

PEAR

PEAR MIDGE (Contarinia pyrivora Riley)

Connecticut

W. E. Britton (June 24): Infestation greater than usual. Fruits received containing maggots.



PEAR PSYLLA (Psyllia pyri L.)

Massachusetts

A. I. Bourne (June 20): Because of the cold and stormy weather the egg-laying period was unusually long drawn out, so that at the time the lime-sulphur application at the cluster-bud stage was made, many of the adult psyllas had not completed their egg laying. As a result, the control which growers were able to secure by this application was much lower than usual, so that the pear psylla at the present is considerably more abundant than it has been for the last few years.

PEACH

ORIENTAL PEACH MOTH(Laspeyresia molesta Busck)

Connecticut

Philip German (June 24): About the same infestation as occurred last year as well as can be judged by the amount of twig infestation.

Virginia

L. M. Peairs (June 15): I have peach material infested with or showing the work of the oriental peach moth from three places near Morgantown and from Marion County, near Fairmont.

Georgia

O. I. Snapp (June 7): Oriental peach moth larvae in peach twigs were sent to the Laboratory from the orchard of J. L. Betts, Woodbury, Meriwether County. This is the first record that we have of the oriental peach moth in a west-central county of the State.

O

E. W. Mendenhall (June 25): The oriental fruit moth is quite plentiful in Columbus and vicinity. Very little is being done as yet for its control.

PEACH BORER (Aegeria exitiosa Say)

Indiana

J. J. Davis (June 2): The peach-tree borer is abundant in orchards where no treatment was made last fall. Many orchards are therefore well infested since conditions last fall were unfavorable for the paradichlorobenzene treatment. (June 24) Many peach orchards which did not receive the paradichlorobenzene last fall are heavily infested now.

Nebraska

M. H. Swenk (April 25 - May 25): Reported as damaging peach trees near Superior, Nuckolls County, during the last week in April.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Wisconsin

F. C. Bishopp (June 25): The plum curculio has caused considerable loss this spring by attacking both plums and peaches. In some instances about 15 per cent of the fruit has been infested.

North Carolina R. W. Leiby (June 16): The first beetle of the first generation emerged at the Aberdeen laboratory June 12. The curculio has been more destructive thus far this season than for the last two years, owing possibly to mild winter and lax control methods being practiced by our commercial growers because of low prices.

Georgia O. I. Snapp (June 19): Second-generation larvae were noted in the peach orchards today. The Hilcy crop escaped second-generation curculio attack this year, but Georgia Belles and Elbertas will be subjected to the second brood.

#### TARNISHED PLANT BUG (Lycus pratensis L.)

Indiana J. J. Davis (June 24): The tarnished plant bug is abundant, and it and possibly other plant bugs have been responsible for considerable damage known as "cat-facing" to peaches in southern Indiana.

#### CHERRY

##### UGLY NEST CHERRY WORM (Archips cerasivorana Fitch)

New York E. F. Felt (June 24): Nests of this species enveloping choke cherries occur here and there in southern Washington County.

#### PLUM

##### RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Missouri A. C. Burrill (June 7): The plum aphid epidemic continues to increase.

##### LEAFY PLUM APHID (Hyalopterus arundinis Fab.)

Connecticut W. F. Zappe (June, 1927): Only European plums have heavy infestation. Japanese varieties are practically immune.

#### RASPBERRY

##### RASPBERRY SAWFLY (Monophadnoides rubi Harris)

Connecticut R. B. Friend (June 15): A small plot of raspberries defoliated.

#### BLACKBERRY

##### AN APHID (Cerosipha rubifolii Thos.)

Missouri A. C. Burrill (May 20): The aphid is greenish, curling the leaves and being tended by the trail ant (Crematogaster lineolata Say) and also being slain by syrphid larvae.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Nebraska  
F. A. Swenk (May 25 - June 25): The first report of injury by the grape leafhopper was received from Cedar County during the first week in June.

Kansas  
F. C. Bishopp (June 25): Leafhopper injury began to be evident early in June and increased considerably through the month, though it is probably not so bad as normal for this time of the year.

GRAPE LEAF FOLDER (Desmia funeralis Hübner.)

Kansas  
F. C. Bishopp (June 25): The first brood of this insect has done only minor damage to grapes in the vicinity of Dallas. Although some parasitism was observed, it is probable that subsequent generations will cause considerable injury to grapes.

CURRENT

CURRENT APHID (Myzus ribis L.)

Ohio  
E. W. Mendenhall (June 1): Currant plants are affected as usual with the currant aphid south of Columbus, causing them to curl with bladderlike galls on the leaves.

NATIVE CURRENT WORM (Gymnonychus appendiculatus Hartig)

Ohio  
E. W. Mendenhall (June 1): The first generation of the larvae have appeared south of Columbus on currants. The use of dusted or sprayed hellebore is safe and effective.

PECAN

THE WALNUT CATERPILLAR (Datana integerrima G. & R.)

Mississippi  
R. W. Harned (June 22): The walnut caterpillar has been received recently from Ocean Springs, Tupelo, Senatobia, Buena Vista, and Shelby, where it was infesting pecan trees. These insects are also abundant on walnut and pecan trees on the college campus A. & M. College

PECAN BUD-MOTH (Proteopteryx bolliana Sling.)

Mississippi  
R. W. Harned (June 22): Specimens of the pecan bud-moth have been received recently from Pascagoula, Clarksdale, Batesville, and McComb.

# TRUCK - CROP INSECTS

## MISCELLANEOUS FEELERS

### CUTWORMS (Noctuidae)

- Massachusetts A. I. Bourne (June 20): Cutworms have been fully as abundant as they were last year, attacking practically all garden crops. Owing to the cold weather which prevailed during our early spring, their work has caused considerable alarm, although it is subsiding.
- Indiana J. J. Davis (June 2): The variegated cutworm, Peridroma margaritosa, was observed defoliating tomato plants and eating heads of cauliflower in an Indianapolis greenhouse. These crops were following lettuce and at the time of observation (May 15) the cutworms were nearly full-grown. Apparently cutworms are not so destructive out of doors as a year ago. (June 24): Cutworms were generally troublesome early in the month in vegetable gardens at Elkhart.
- North Carolina C. H. Brannon (June 1): Cutworms are causing serious damage to beans in commerical areas in Wayne County.
- Minnesota C. E. Mickel (June 16): There has been some report of injury by cutworms throughout the State during the last month, but the injury is not so severe as in previous years.
- Nebraska H. H. Suenk (April 25-May 25): Cutworms of various species are doing more than the usual amount of damage in gardens this spring.

### TURNIP BUG (Turnip Bug (Plutella histrionica Fahn))

- Mississippi R. W. Harned (June 22): Complaints accompanied by specimens of the insects have been received from Belmont, Union, Ellisville, and Shuqualak. Turnip and cabbage seem to be the principal crops injured, although in one case the correspondent stated: "They have almost ruined my garden."
- Texas E. C. Bishopp (April 16): These bugs have been causing considerable loss to garden owners in the vicinity of Menard.

### LEAF-FOOTED BUG (Leptoglossus phyllopus L.)

- Mississippi R. W. Harned (June 22): Specimens of the leaf-footed bug were collected on artichokes at Natchez, on Irish potato at Ellisville, on May 26, and on squash and cucumbers at Utica on June 6.

### IMBRICATED SNOUT BEETLE (Epicaerus imbricatus Say)

- Nebraska H. H. Suenk (April 25-May 25): On May 24, a correspondent in Buffalo County reported the imbricated snout beetle as injuring the beans, onions, and potatoes on his farm.



GARDEN SPRINGTAIL (Sminthurus hortensis Fitch)

ecticut R. B. Friend (June 21): There has been more or less damage to cotyledons of all plants, including melons, squash, and cucumbers, near Hamden. There is a greater number than last year.

POTATO AND TOMATO

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

ana J. J. Davis (June 24): The potato flea beetle was reported abundant at Nappanee June 22.

esota C. E. Mickel (June 24): Flea beetles have been more abundant than usual this spring, injury having been reported on tomato and potato.

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

ana H. B. Johnson (May): The Colorado potato beetle began to be serious about May 1, but was checked by applying a cornmeal and Paris green mash.

aska H. H. Swenk (May 25-June 25): Indications are that the Colorado potato beetle is more plentiful than usual in the extensive potato growing districts of northwestern Nebraska this spring, and that this will be a year when spraying operations will need to be resorted to in that portion of the State.

ana W. B. Mabey (June 17): Potato bugs are being observed in the fields.

POTATO APHID (Illinoia solanifolii Ashm.)

T. E. Parks (June 22): The pink and green potato aphid has become very abundant and is threatening the crop of tomatoes on the grounds of the State Hospital at Columbus. It is also becoming abundant on potatoes in the vicinity of Columbus.

LEAFHOPPER (Empoasca fabae Harris)

h Z. P. Metcalf (June 1): Hopperburn is very serious on early Irish potatoes in the district of Pasquotank this year.

APPLE LEAFHOPPER (Empoasca mali LeB.)

ana J. J. Davis (June 24): The potato leafhopper was reported damaging potatoes at Berne June 21.

TARNISHED PLANT BUG (Lygus pratensis L.)

Kansas J. W. McCulloch (June 1): This insect has caused serious damage to potatoes at Junction City.

STALK BORER (Papaipema nebris nitela Guen.)

Indiana J. J. Davis (June 2): The common stalk borer was first reported this year from Worthington, June 10, where it had already destroyed one-fifth of the recently set tomato plants in a commercial field.

Nebraska M. H. Swenk (May 25-June 25): The first cases of complaint of injury by the stalk borer were received during the second week in June from southeastern Nebraska, these relating chiefly to attacks on potato and tomato plants.

SUCKFLY (Dicyphus minimus Uhl.)

Mississippi R. W. Harned (June 22): R. P. Colmer, inspector for the State Plant Board, Moss Point, reported the first appearance of the tomato suckfly, Dicyphus minimus Uhl., on June 13. Slight damage was noted to tomato plants at Moss Point.

BLISTER BEETLES (Meloidae)

Kansas J. W. McCulloch (June 20): Reports of injury to potatoes have been reported from Long Island June 11 and Bogue June 17.

Mississippi R. W. Harned (June 22): Serious damage to Irish potatoes by Epicauta lemniscata was reported from Ellisville.

GRAY BLISTER BEETLE (Epicauta cinerea Forst.)

South Carolina J. O. Pepper (June 13): Gray blister beetles have been reported as destroying tomato plants in the area around Westminster of Oconee County.

Mississippi R. W. Harned (June 22): Serious damage to Irish potatoes by this blister beetle, at Hatches, and to beans at Brooksville, was reported.

ASH-GRAY BLISTER BEETLE (Macrobasis unicolor Kirby)

Mississippi R. W. Harned (June 22): Serious damage by Macrobasis unicolor to Irish potatoes was reported from Smithville.

STINK BUGS (Coreidae and Pentatomidae)

Louisiana Chas E. Smith & Norman Allen (June 1): Considerable damage to the fruits of tomato were observed in three fields in the vicinity

of Baton Rouge. This damage was being done largely by three species. The leaf-footed plant bug, Leptoglossus phyllopus L., was the principal offender, while Euschistus servus Say and Nezara viridula L. were present in injurious numbers.

NEGRO BUG (Thyreocoris pulicarius Germ.)

Mississippi R. W. Harned (June 22): Negro bugs have been received from Ellisville, Independence, and Winona, where they were reported as injuring Irish potato plants.

CABBAGE

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Massachusetts A. I. Bourne (June 20): Cabbage maggots were reported by Mr. Whitcomb of the market garden district in Middlesex County as about average abundance, and their appearance was just about normal. A report from Bristol County, however, from a region around Dighton, showed the first eggs fully two weeks earlier than in 1926, and somewhat earlier than is normal for this species.

Maryland W. C. Rohde (May 27): Enorbia brassicae is causing considerable loss and necessitating much replanting.

CABBAGE APHID (Brevicorye brassicae L.)

Indiana J. J. Davis (June 24): The cabbage aphid was abundant and damaging cabbage at Terre Haute June 8.

STRAWBERRY

STRAWBERRY LEAF ROLLER (Ancyliis comptana Frohl.)

Massachusetts J. W. McColloch (June 1): A report of injury to strawberry by Ancyliis comptana has been received from Canton.

STRAWBERRY ROOT WORM (Paria canella Fab.)

Alabama H. B. Johnson (May): In a strawberry bed of 150 plants which were set out this year in the vicinity of Birmingham, several plants shriveled and died. An investigation revealed the work of the strawberry root borer.

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

Montana W. B. Mabey (June 17): The strawberry root weevil at this season appears to be no more abundant than usual.

NAVY-STRIPED FLEA BEETLE (Phyllotreta sinuata Steph.)

Indiana J. J. Davis (June 24): Reported June 20 as damaging strawberry at Marion.

STRAWBERRY SLUGS (Emmria fragariae Bohrer)  
(Emmria maculata Norton)

Nebraska

M. H. Swenk (May 25-June 25): Strawberry slugs were more than usually troublesome during the period covered by this report. The early strawberry slug, Emmria fragariae, began to be much complained of during the last few days in May, reports being received from all parts of eastern Nebraska. These injuries were followed by those of the late strawberry slug, Emmria maculata Norton, which species is still active in the strawberry beds at the time of making this report.

Myriapoda

Indiana

J. J. Davis (June 2): Thousand-legged worms were reported from Princeton, May 18, eating into the fruits of strawberry and causing appreciable loss.

ASPARGUS

ASPARGUS BEETLE (Crioceris asparagi L.)

Massachusetts

A. I. Bourne (June 20): Asparagus beetles of both species appeared in approximately normal abundance.

Maryland

F. D. Senders (May 4): Crioceris asparagi L. was reported as attacking asparagus at Henderson.

BEANS

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Montana

M. B. Mabey (June 21): The seed corn maggot is doing damage to germinating beans at Hardin.

BEAN APHID (Aphis rumicis L.)

Nebraska

M. H. Swenk (May 25-June 25): The bean aphid has been very plentiful during the past two weeks.

LIMA BEAN VINE BORER (Monoptilota pergratialis Hbst.)

Mississippi

R. W. Harned (June 22): Specimens of the lima bean vine borer, Monoptilota nubilella, have been received from Meridian, where they were reported as injuring beans May 25.

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

North

Carolina

R. W. Leiby (June 8): More complaints of injuries than usual are being received. The first authentic date of their appearance was May 27. Complaints are coming mainly from the northern



Piedmont section. Forty-six westernmost counties of the State are now infested.

South  
Carolina

C. O. Eddy (June 20): Spring emergence of hibernating beetles about over. Damage bad locally throughout the Piedmont section. Infestation not general yet.

Indiana

J. J. Davis (June 24): The Mexican bean beetle is very abundant and destructive in the southeastern Quarter of the State.

Alabama

F. B. Johnson (May 24-25): In my garden in Birmingham vicinity the Mexican bean beetle was found seriously injuring young bean leaves. All stages of the beetle were prevalent.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)  
BEAN LEAF BEETLE (Cerotoma trifurcata Foerst.)

Mississippi

K. L. Cockerham (June 13): Both species were found attacking beans in such numbers as to necessitate dusting for their control. The leaves showed considerable damage, and the beetles flew out in considerable numbers when the plants were disturbed.

#### CUCUMBERS AND MELONS

COTTON APHID (Aphis gossypii Glor.)

Mississippi

R. W. Harned (June 22): Aphis gossypii on cucumber at Kreole and Moss Point was reported June 1.

SEED CORN MAGGOT (Eulema cilicrura Rond.)

Indiana

J. J. Davis (June 24): Larvae supposed to be the seed corn maggot were reported damaging planted cucumber seed at Plymouth June 13.

SQUASH BUG (Anasa tristis DeG.)

Georgia

C. I. Snapp (June 14): Squash bugs have been unusually abundant this year. They are now attacking cucumbers and watermelons. Considerable damage to the Georgia watermelon crop has resulted this year from squash bug attacks. Early squash was also very heavily infested.

Mississippi

R. W. Harned (June 22): Complaints of injury accompanied by specimens have been received from Sapa and Dekalb, in regard to the common squash bug on watermelon vines.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Mississippi

K. L. Cockerham (June 16): Cucumbers and canteloupes were attacked by this insect and showed rather severe injury. The plants were dusted for the control of the beetles.

Kansas J. W. McColloch (June 20): The striped cucumber beetle has been very prevalent this year on melons and cucumber in the counties of Graham, Jewell, Ellsworth, Republic, Lyon, Johnson, and Crawford.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Kansas J. W. McColloch (June 22): On June 6 the beetles were reported injuring melons at Tanganoxie, and on June 14 injuring cantaloupes at Spring Hill.

SQUASH

SQUASH BORER (Melittia satyriniformis Hübner.)

Mississippi and Alabama K. L. Cockerham (June 17): Melittia satyriniformis continues to be one of the most serious of truck-crop pests this spring. It has been found injuring squash in Lincoln, Pearl River, Hancock, Harrison, and Jackson Counties, Miss., and Mobile County, Ala. While squash is not, perhaps, our principal crop, yet some are found in every garden. Many cases run around 100 per cent infestation.

ONIONS

ONION MAGGOT (Hylemyia antiqua Meig.)

Indiana J. J. Davis (June 24): The onion maggot has been reported as damaging onions the past month from Elkhart and Ashley.

BEETS

STRIPED BLISTER BEETLE (Epicauta vittata Fab.)

South Carolina J. O. Pepper (May 26): Specimens of this insect were received from Awenden in Georgetown County, and reported as seriously injuring the foliage of beets.

SWEET POTATO

TORTOISE BEETLES (Cassidinae)

South Carolina J. O. Pepper (May 30): Specimens of tortoise beetle larvae have been received from Woodruff and reported as damaging sweet-potato plants that had been transplanted.

Mississippi R. W. Harned (June 22): The following tortoise shell beetles were reported as attacking sweet potatoes: Metriona bivittata Say June 2, at Kendrick; Chelymorpha cassidea Fab. May 27, at Yazoo City and A. & M. College; Jonthonota nigripes Oliv. June 2 at Kendrick.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Mississippi

K. L. Cockerham (June 18): Considerable numbers of these beetles are seen in fields of sweet potatoes and injury to the leaves can be noticed.

SWEET-POTATO FLEA BEETLE (Chaetocnema confinis Cr.)

Mississippi

R. W. Harned (June 22): Specimens of the sweet-potato flea beetle collected on sweet-potato plants have been received from Kendrick.

RHUBARB

RHUBARB CURCULIO (Lixus concavus Say)

Indiana

J. J. Davis (June 2): The rhubarb curculio was reported injuring rhubarb at Rochester and Spencerville the past month.

RADISH

CABBAGE MAGGOT (Hylomyia brassicae Bouche)

Indiana

J. J. Davis (June 24): The cabbage or radish maggot damaged radishes at Sheridan June 14.

FALSE CHINCH BUG (Nysius ericae Schill.)

Kansas

J. W. McColloch (June 5): Severe damage to radish and turnips reported from a truck garden at Hays.

PEPPER

TOMATO WORM (Protoparce sexta Johns.)

Louisiana

T. E. Holloway and W. E. Haley (May 25): Horn worms, probably Phlegethontius sexta, were found injuring pepper plants near New Orleans.

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli Guen.)

Louisiana

T. E. Holloway and W. E. Haley (May 25): The cotton cutworm, Prodenia ornithogalli, was found attacking pepper plants near New Orleans. Various larval stages up to last-instar larvae were present. As damage from cutworms is feared following the floods, in the Mississippi Valley, these records may be of interest. M. M. High identified Prodenia ornithogalli in its various stages.

BLACK CUTWORM(Agrotis ypsilon Rott.)

Louisiana

T. E. Holloway and W. E. Haley (May 25): The greasy cutworm, Agrotis ypsilon, was found attacking pepper plants near New Orleans. Various stages up to last-instar larvae were present. As damage from cutworms is feared following the floods in the Mississippi Valley, these records may be of interest.

PEPPER WEEVIL (Anthonomus eugenii Cano.)

The

California

R. E. Campbell (June 15): / pepper weevil in southern California is extremely late in appearing in the fields this year. Up to the present time practically no adult weevils have been observed in the plantings.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

B. R. Coad (Cooperative Report June 1): Comparing records this year with those of 1926, a greater survival will be noted this year at Florence, S. C., College Station, Texas, Aberdeen, N. C., Raymond, Miss., Rocky Mount, N. C., A. & M. College, Miss., Poplarville, Miss., and Holly Springs, Miss., while a greater survival was recorded in 1926 at Auburn, Ala., Baton Rouge, La., and Experiment, Ga.



- North Carolina R. W. Leiby (June 8): Winter survival has been unusually heavy according to winter cage records. J. A. Harris reports finding his first weevils in the field on cotton on June 6 in a locality where cotton shows tiny squares. (June 16): First punctured squares found by J. A. Harris June 14. First weevil taken on cotton on June 6, in Scotland County. On June 14, 3,865 plants in 10 fields averaged one weevil per 100 plants, the maximum being 5 weevils per 100 plants.
- South Carolina C. O. Eddy (June 20): No activities in the Piedmont section reported or observed.
- Mississippi R. W. Harned (June 22): High weevil infestations are being reported in nearly all sections of the State except the Delta. During the week ending June 18, State Plant Board inspectors examined 146 farms in 40 counties, finding weevils on 97 of them. Several infestations of 15 per cent, 16 per cent, 17 per cent, and 20 per cent were found, in sharp contrast with  $3\frac{1}{4}$  per cent, the highest infestation on the same date last year. General rains have fallen and showery weather is prevailing over most of the State. A high percentage of the first-generation weevils are reaching maturity and heavy infestations are expected during the next week or two.

FLEA HOPPER (Psallus seriatus Reut.)

- North Carolina R. W. Leiby (June 16): Noted by J. A. Harris as abundant in Red Spring to Laurinburg section and present in adjacent counties. Where cotton was squaring, blasted squares were commonly found June 14. Reported from Edgecombe County June 8 and from Cleveland County June 6.
- South Carolina C. O. Eddy (June 20): Cotton flea hopper on cotton in very small numbers. Abundant on evening primrose. Primrose is now maturing and cotton beginning to grow rapidly and cotton flea hoppers depositing some eggs on plants now.
- Mississippi R. W. Harned (June 22): Cotton flea hoppers are abundant on horsemint and croton and are present in some cotton fields. No injury has been observed to date.

COTTON LEAF WORM (Alabama arillacea Hübner.)

- Tennessee R. W. Harned (June 22): Specimens of what is believed to be the cotton leaf worm were received from Somerville, on June 16. They were almost full-grown and are being reared to maturity for definite determination.

COTTON APHID (Aphis gossypii Glov.)

- South J. O. Pepper (May): Young cotton has been infested locally by this insect in the Piedmont section.

Mississippi R. W. Harned (June 22): On cotton at Indianola on June 9; and on cotton at Michigan City on June 18. The infestations at Michigan City seemed to be heavy enough to demand control measures. Identification by A.L. Hammer.

North

Carolina

R. W. Leiby (June 16): The cotton leaf louse is about as abundant as in average years.

A CHRYSOMELID (Luperodes sp.)

Mississippi

R. W. Harned (June 22): Insects identified by J. M. Langston as Luperodes sp. have been received from Jackson and Clinton. They were reported as damaging cotton.

THREE-CORNERED ALFALFA HOPPER (Stictocephala festina Say)

Mississippi

R. W. Harned (June 22): Specimens were collected on cotton at Lena on May 27.

THRIPS (Thysanura)

South

Carolina

C. O. Eddy (June 22): Thrips have been abundant on young cotton plants throughout the entire Piedmont section up to this time. Infestation now decreasing.

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

Virginia

J. U. Gilmore (May 26): Epitrix parvula is damaging very seriously newly set tobacco and tomato plants.

WIREWORMS (Elaterridae)

Virginia

J. U. Gilmore (May 28): Indications are that this will be the worst wireworm year of the past four.

WEBWORM (Crambus caliginosellus Clem.)

Virginia

J. U. Gilmore (May 28): Crambus caliginosellus is now causing heavy losses to tobacco set a week ago.

Florida

SOUTHERN GREEN STICK BUG (Nezara viridula L.)  
F. S. Chamberlin (June 20): Adults of the southern green plant bug are rather numerous at the present time. A slight damage is being done to crops of tobacco.

TOBACCO THRIPS (Frankliniella fusca Hinds)

Florida

F. S. Chamberlin (June 6): The tobacco thrips has caused practically no damage in Gadsden County this season in spite of ex-

ceedingly dry weather. It is believed that the frequent applications of Paris green made during the early part of the growing season for flea beetle control exert a strong controlling influence over the tobacco thrips.

SUGARCANE

SUGARCANE BEETLE (Euetheola rugiceps Lec.)

Mississippi

R. W. Harned (June 22): Complaints accompanied by specimens of the insects continue to be received at this office in regard to the rough-headed cornstalk beetle or sugarcane beetle. Corn and sugarcane are the crops being injured in most cases, although in one or two instances cotton stalks have been attacked. One man reported that 75 per cent of his sugarcane had been injured by these beetles.

F O R E S T   A N D   S H A D E - T R E E   I N S E C T S

MISCELLANEOUS FEEDERS

PERIODICAL CICADA (Tibicina septendecim L.)

West  
Virginia

A. D. Hopkins (May 26): The periodical cicada is here (Kanawha Farms, Mineral Wells) in limited numbers. The only record we have for its appearance in West Virginia is for 1895 in Grant, Hardy, Pendleton, and Randolph Counties. It was predicted in my W. Va. Bulletin 58, p. 279 for 1910 in all of West Virginia counties bordering Virginia.

L. M. Peairs (June 15): I got some specimens from a hitherto unrecorded locality for this brood at Reedsville, Preston County. Mr. Rumsey later visited the locality and did not find any of the insects so it is apparent that they are scarce. There is no doubt about the occurrence, though, as I have two specimens.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

New York

E. P. Felt (June 24): White-marked tussock moth caterpillars are just hatching in Buffalo and relatively few compared with earlier years (C. T. Clark, City Forester, June 15). This insect was reported as hatching at Rochester at the end of May and it has developed very slowly, partly owing to the cool weather and more likely to the early thorough spraying (R. E. Horsey).

Ohio

E. W. Mendenhall (June 2): The white-marked tussock moth began to show its work on the sycamore and elm trees along the streets in Springfield. The partly grown caterpillars can readily be destroyed by arsenical poisons.

T. H. Parks (June 22): The larvae are beginning to damage elms and other shade trees in Columbus. They are much more abundant this year and have required spraying to control.

Indiana

J. J. Davis (June 2): Tussock moth eggs are very abundant throughout central Indiana, and inasmuch as there has been an inappreciable winter mortality, considerable trouble from the caterpillars is anticipated. (June 24): Tussock moth caterpillars began hatching at La Fayette June 3. Reports of defoliation received from Greensburg, LaFayette, Terre Haute, and Logansport.

CANKER WORMS

Connecticut

M. P. Zappe (June 16): Cankerworms are attacking oak, maple, apple, etc. An oak grove near the town of Lyme almost defoliated Calosoma scutator Fab. feeding on larvae, which are also dying of a wilt disease.

FALL CANKER WORM (Alsophila pometaria Harr.)

New England  
States and  
New Jersey

J. V. Schaffner Jr. (June 17): Seems to be very common in many localities in New England and New Jersey, though no serious defoliations have been reported.

Connecticut

W. E. Britton (June 13): Larvae now about full-grown at Westport and vicinity, on shade trees and fruit trees. It also appeared in one orchard at Mount Carmel (town of Hamden). Apparently none around Danbury.

Pennsylvania

W. J. McGovern through T. L. Guyton (June 20): "I have been in the woods for more than 40 years, and while I have been familiar with them I never saw them in droves like they are at the present time. In the last three weeks I have been in the following counties: Clearfield, Clinton, Centre, Jefferson, and Clarion, and I find them everywhere." (Determination by A. B. Champlain).

Montana

W. B. Mabey (June 21): The fall canker worm is again this year starting to defoliate shelter belts in the neighborhood of Havre.

SPRING CANKER WORM (Paleocrita vernata Peck)

New York

E. P. Felt (June 24): Canker worms attacked elms, lindens, and hickory in Westchester County localities. There was partial defoliation and nearly complete stripping by this insect in stream-bottom growths, mostly elm, in southern Washington and northern Rensselaer Counties, serious injury being quite restricted.

FALL WEBWORM (Hyphantria cunea Drury)

Mississippi

R. W. Harned (June 22): The fall webworm has made its appearance in practically every section of the State.



- Arkansas W. J. Baerg (June 16): The first eggs of Hyphantria cunea were found on shade trees at Fayetteville June 16.
- EUONYMUS SCALE (Chionaspis euonymi Comst.)
- New York E. P. Felt (June 24): The euonymus scale observed crawling on June 8, and in one section there is a serious infestation, the Euonymus on a large factory building being half dead and very unsightly (R. E. Horsey).
- ARBORVITAE
- LONG SPRUCE CONE GALL (Chermes cooleyi Gillette)
- Ohio E. W. Mendenhall (May 31): Spruce gall aphids were quite numerous on Biota (Arborvitae), and were doing some damage, but whale-oil soap seemed to control them.
- BEECH
- WOOLLY BEECH LEAF APHID (Phyllaphis fasci L.)
- New York E. P. Felt (June 24): The woolly beech leaf aphid is somewhat common at Rochester on a variegated European beech, but less abundant than usual (R. E. Horsey):
- BIRCH
- BIRCH LEAF MINER (Fenusa pumila Klug)
- Massachusetts J. V. Schaffner Jr. (June 21): This leaf-mining sawfly is very abundant again this year on gray birch throughout eastern Mass.
- BOXELDER
- FOREST TENT CATERPILLAR (Malacosoma disstria Hüb.)
- Missouri A. C. Burrill (June 21): The first nest noticed on boxelder the past week is that of the forest caterpillar.
- BOXELDER BUG (Leptocoris trivittatus Say)
- Kansas J. W. McColloch (June 13): The boxelder bug is abundant on boxelder at Lacrosse and is also becoming a nuisance in houses.
- CEDAR
- BAGWORM (Thyridopteryx ephemeraeformis Haw.)
- Kansas J. W. McColloch (June 20): The only report of bagworms received this month came from Auburn where they were reported abundant on cedars.

ELM

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Missouri A.C.Burrill (May 30): So numerous that the lower leaves show sticky spots of honeydew as if they had been sprayed. This is the usual leaf-curling species although I have not determined it by microscope.

WOOLLY ELM APHID (Eriosoma americana Riley)

Nebraska M. H. Swenk (May 25-June 25): The elm leaf curl produced by Schizoneura americana has been complained of throughout the State since the second week in June.

EUROPEAN ELM SCALE (Gossyparia spuria Hodeer)

New York E. P. Felt (June 24): The elm bark louse is more abundant than usual though no young have been observed at Rochester (R. E. Horsey).

ELM LEAF BEETLE (Galerucella xanthomelaena Schrank)

New York E. P. Felt (June 24): The elm leaf beetle has not been reported at Rochester to date, which is rather unusual unless the insect is being retarded by cool weather (R. E. Horsey). This condition also obtains in Albany and vicinity.

ELM LEAF MINER (Kaliotenus ulmi ~~Sund.~~)

New York E. P. Felt (June 24): The elm leaf miner is rather abundant on eight elms on East Avenue, Rochester, and extremely abundant on some small trees in the environs of Troy.

ELM SCURFY SCALE (Chionaspis americana Johns.)

Nebraska M. H. Swenk (April 25-May 25): About the usual number of complaints relative to the white elm scale were received during the period covered by this report.

PUTNAM'S SCALE (Aspidiotus ancylus Putn.)

Nebraska M. H. Swenk (April 25-May 25): A report of a heavy infestation of an elm tree with Putnam's scale was received from Fillmore County.

HAWTHORN

HAWTHORN LEAF MINER (Protenusa collaris Mac G.)

New York E. P. Felt (June 24): Hawthorn leaf miner. A number of hawthorns are infested with this insect in both the Genesee Valley and Highland Parks, Rochester (R. E. Horsey).

HICKORY

(Phylloxera caryaefallax Riley)

Missouri A. C. Burrill (June 7): I enclose some new galls on shagbark hickory found south of Jefferson City. (Determined by F.W.Mason).

LARCH

LARCH CASE BEARER (Coleophora laricella Hüb.)

Maine, Vermont and Massachusetts J. V. Schaffner Jr. (June 17): Reported as very abundant in vicinity of Bangor, Orono, and Dover-Foxcroft, Maine, and Stockbridge, Mass. The feeding by these small larvae has caused the foliage to turn brown on the larch trees in localities named. (June 23): A report was received today that all larch in vicinity of Bristol, Vt., are badly browned.

New York E. P. Felt (June 24): Larch foliage very generally browned by the mines of the larch case bearer was reported from Rochester June 8, the material containing recently issued moths. The insect occurred upon several varieties of larch and had not been observed until the present season (R. E. Horsey).

WOOLLY LARCH APHID (Chermes strobilobius Kalt.)

New York E. P. Felt (June 24): The woolly larch aphid was quite abundant as usual on European and Japanese larch (R. E. Horsey).

LOCUST

LOCUST TWIG GALL (Ecdytolopha insiticiana Zell.)

Missouri A. C. Burrill (May 31): Please find enclosed spray of locust tree with gall twigs of unknown gall insect, with molts, still attached to base of twig. The last three days adults have emerged (cast skins in exit hole sent herewith). (Determination by C. T. Greene.)

MAPLE

MAPLE CHAITOPHORUS (Periphyllus aceris L.)

Ohio T. H. Parks (June 22): These aphids are very abundant and causing the Norway maples to be covered with sticky secretion or honeydew. Have had complaints from Columbus, Cincinnati, Hamilton, Lebanon, and Springfield.

AF APHID (Drepanaphis acerifolii Thoms.)

Ohio E. W. Hendenhall (June 14): The maple aphid is very bad on the maple in Columbus and doing considerable damage to the leaves.

The leaves are dripping with honeydew. Nicotine sulphate is a control spray.

NORWAY MAPLE APHID (Periphyllus lyropicta Kessler)

- Ohio E. W. Mendenhall (June 1): Norway maples trees in Dayton are quite badly infested with Norway maple aphids.
- Indiana J. J. Davis (June 24): Hard and Norway maples have a heavy infestation of Periphyllus lyropicta and the upper surfaces of the leaves are heavily coated with honeydew. Reports of this species have been coming in since June 2, and definite inquiries have been received from the following counties: Johnson, Whitley, Wayne, Madison, Fountain, Cass, Grant, Howard, Hamilton, Marion, Rush, Delaware, Ripley, and Decatur. Shrubs such as nine-bark, spiraea, and Viburnum are heavily infested as are also various weeds and cultivated flowers.

GREEN FRUIT WORM (Xylina antennata Wlk.)

- Ohio E. W. Mendenhall (June 2): A slight infestation of the green maple worm was found at New Carlisle. Birds and parasites usually hold them in check.

COTTONY MAPLE SCALE (Pulvinaria innumerabilis Rathv.)

- Ohio E. W. Mendenhall (June 8): The cottony maple scale is beginning its activity this week on the soft maple trees in Columbus. They are quite abundant.
- Indiana J. J. Davis (June 2): The cottony maple scale continues as an important shade-tree pest in the northern half of the State. (June 24): The cottony maple scale has again shown up throughout the northern half of the State, especially central Indiana, in conspicuous and destructive abundance. Definite reports were received from the following counties: Decatur, Tipton, Boone, Henry, Wayne, Grant, Madison, Delaware, Fayette, Cass, Marion, Howard, Tippecanoe, Hendricks, Hamilton, Miami, Huntington, Rush, and Elkhart. To date eggs have not started to hatch at La Fayette.

GOUTY VEIN GALL (Dasyncura communis Felt)

- Missouri A. C. Burrill (June 7): I enclose sugar maple leaves with galls for determination. (Determined by C. T. Greene.)

ERIOPHYES GALLING (Eriophyes sp.)

- Missouri A. C. Burrill (May 18): This gall epidemic confined to the lower branches and leaves and differs from work of Eriophyes quadripes Shimer. There are 2 per cent of the leaves damaged. (Determined by H. E. Ewing who says "Eriophyes sp., probably undescribed. Mentioned in Felt's Bulletin, p. 134.")



OAK

FOREST TENT CATERPILLAR (Malacosoma disstria Hubn.)

Massachusetts J. V. Schaffner Jr. (June 17): Common this year in oak woodlands through eastern Massachusetts. No serious outbreaks reported.

HICKORY APHID (Longistigma carvae Harr.)

North Carolina J. O. Pepper (June 5): Giant hickory aphids are still present in large numbers on water oak in the Piedmont section.

A LEAF MINER (Species undet.)

North Carolina J. O. Pepper (June 1): White oak leaves infested by a small moth leaf-miner (species undetermined) have been received from Saluda County and reported as seriously injuring the foliage on a large white oak.

PINE

A Correction

E. O. Craighead (June 16): The note on Dendroctonus valens in the June 1 issue of the Bulletin, p. 125 from the Monthly Letter of the Bureau of Entomology, No. 156, April, 1927, should have been under Dendroctonus frontalis Zimm.

SAWFLY (Tenthredinidae)

Louisiana (Monthly Letter of the Bureau of Entomology, No. 157, May, 1927): C. W. Bilbray, of the Louisiana Department of Conservation, stationed at Many, reported an extensive outbreak of sawfly larvae on shortleaf pine this year. The larvae appeared in Sabine and Vernon Parishes about April 28, attacking more than 3,600 acres of young growth from 3 to 5 feet high. It was stated that the full-grown larvae are plentiful at this time, and suggestions were made for their control. These larvae were first reported as defoliating pines in June, 1926. Mr. Bilbray also reported the browning of foliage of apparently thrifty young pine trees by lepidopterous needle miners, extending over the same areas in these two parishes.

SERICE SAWFLY (Neodiprion abietis Harr.)

Massachusetts J. V. Schaffner Jr. (June 17): Larvae of a sawfly are unusually common on Pinus rigida (pitch pine) throughout eastern Mass. Many reports of its occurrence have been received the past few days. One collector found it damaging Pinus resinosa (red pine).

New York E. F. Felt (June 24): Injury by this insect to scrub pine was re-

ported from the Champlain Valley. Presumably this insect was reported as having defoliated an area about 12 miles square between Keesville and Plattsburg.

PINE LEAF MINER (Paralechia pinifoliella Chamb.)

Massachusetts J. V. Schaffner Jr. (June 23): This leaf miner is very abundant on Pinus rigida (pitch pine) through eastern Mass. The ends of the needles of last year's growth are badly mined which gives the trees a brownish appearance.

W. Middleton (June 24): When Dr. Craighead was in New Bedford, in the early part of June, he collected a needle miner in pitch pine. The insect was common and causing serious injury in that neighborhood. Mr. Heinrich identified it as Paralechia pinifoliella Chamb.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

New York E. F. Felt (June 24): Young were crawling at Rochester June 11 though not nearly so numerous as in past years owing to persistent spraying. (R. E. Morsey.)

Nebraska M. H. Swenk (May 25-June 25): The usual number of complaints relative to the pine leaf scale were received during the period covered by this report.

POPLAR

POPLAR CURCULIO (Cryptorhynchus lapathi L.)

Indiana J. J. Davis (June 24): The mottled poplar borer was reported very destructive to poplar at Williamsport June 18.

YELLOW-SPOTTED WILLOW SLUG (Pteronus ventralis Say)

Ohio E. W. Mendenhall (June 2): Clusters of eggs of the yellow-spotted willow slug are quite numerous on poplar trees in the nursery at New Carlisle, but no noticeable damage yet.

SUMAC

SPIDER MITE GALL (Phyllocoptes toxicophagus [Mason])

Missouri A. C. Burrill (June 14): Enclosed is a sample of spider mite gall work on wild aromatic sumac (Rhus canadensis), which looks just like what I have seen on poison ivy leaves. These were reddish when picked and are turning darker. (Determined by H. E. Ewing, who says, "Apparently a new variety of Phyllocoptes toxicophagus.")

SPRUCE

SPRUCE BUDWORM (Harmolozia fumiferana Clem.)

E. W. Mendenhall (May 31): The blue spruce in a nursery in Mt. Vernon badly infested with spruce budworm. Nicotine sulphate seems to be very valuable for treating the pest.

RED SPIDER (Tetranychus telarius L.)

J. W. McColloch (June 18): The red spider is causing severe damage to spruce at Leavenworth.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

W. J. Baerg (June 16): Caterpillars began hatching on June 11. Judging by the number of eggs found, injury by caterpillars will be quite severe.

WILLOW

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

C. E. Mickel (June 24): One of the most severe cases of injury was in a field of willow cuttings planted by a nursery in the southern part of the State. This field contained several millions cuttings and a large percentage of the plants were almost entirely defoliated.

GREENHOUSE AND ORNAMENTAL PLANTS

MISCELLANEOUS FEEDERS.

APHIDIIDAE

C. E. Mickel (June 16): Plant lice are just beginning to appear in some numbers and are attacking a variety of plants including plum, buckthorn, boxelder, rose, and snowball. (June 24): Aphids continue to be more and more abundant, especially on ornamental plants. At the present time we are receiving numerous reports regarding injury on buckthorn hedges and boxelder.

A BEETLE (Blepharida rhois Forst.)

R. L. Parker (June 20): Larvae are defoliating the plants. They are especially destructive to the smoke-tree (Rhus cotinus) used for ornamental planting.

ALTHAEA

A MEALYBUG (Pseudococcus maritimus Ehrh.)

Mississippi R. W. Harned (June 22): Mealybugs identified by Miss Gladys Hok as Pseudococcus maritimus were collected on May 31 at Brookhaven. The host plant was althaea. This is the first time this species has been reported from Mississippi.

BOXWOOD

BOXWOOD LEAF MINER (Monarthropalpus buxi Labou.)

Connecticut W. E. Britton (June 13): The box leaf miner attacking box at Westport was reported by A. H. Kellner. Adults just beginning to emerge.

District of Columbia (Monthly Letter of the Bureau of Entomology, No. 157, May, 1927): Some of the specimen box bushes bordering the drive on the north side of the White House have been very heavily infested by the boxwood leaf miner, and Mr. Middleton, of this office, has been active in making recommendations and offering advice to Mr. Reeves, of the White House, in combating the insect.

CHRYSANTHEMUM

MARGUERITE FLY (Phytomyza chrysanthemi Kowarz.)

Mississippi R. W. Harned (June 22): Specimens of the marguerite fly were collected on chrysanthemum plants at Yazoo City on June 2, and on violet plants at Winona May 26.

DAHLIA

BLOSSOM ANOMALA (Anomala undulata Mels.)

Mississippi R. W. Harned (June 22): Anomala undulata was reported as causing serious damage to dahlia blooms at Conway on June 13.

HONEYSUCKLE

SAWFLY (Tenthredinidae)

Missouri A. C. Burrill (June 10): Sawfly larvae have appeared on Japanese vine honeysuckle.

IRIS

IRIS BORER (Macronoctua onusta Grcte)

Ohio E. W. Mendenhall (June 7): The iris borer is quite prevalent at Columbus and vicinity, and south, this month, damaging iris.



LILAC

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.,

Massachusetts A. I. Bourne (June 20): Oyster-shell scale. An examination disclosed the fact that the young were crawling about the twigs of lilac by June 12-14, three or four days later than the corresponding record for apple.

HAREHORN BUG (Thurgantia histrionica Hahn)

Texas F. C. Bishopp (April 16): An instance was observed in which they were present in lilacs in great numbers and caused the withering of all blooms before they fully opened.

MAHONIA

WALNUT SCALE (Aspidiotus juglans-regiae Comst.)

Ohio E. W. Mendenhall (May 31): Mahonia plants in a nursery in Cincinnati infested with Aspidiotus juglans-regiae Comst.

NARCISSUS

ALFALFA NEMATODE (Tylenchus dipsaci Kühn.)

Ohio E. W. Mendenhall (May 31): Found some damage to Narcissus at Columbus, Dayton and Piqua from the eelworm Tylenchus dipsaci. Another inspection will be made when lifted, then followed by treatment.

PHLOX

RED SPIDER (Tetranychus telarius L.)

Indiana J. J. Davis (June 2): The red spider has been abundant on phlox at La Fayette the past month.

RHODODENDRON

RHODODENDRON LACE BUG (Stephanitis rhododendri Harr.)

New York E. P. Felt (June 24): Rhododendron lace bugs, Leptobysa explanata, are not very numerous at Rochester owing to persistent spraying. (R. E. Horsey.)

ROSE

ROSE APHID (Macrosiphum rosae L.)

Ohio E. W. Mendenhall (June 17): The rose aphids are quite bad this year over all the State. They attack rose plants in the terminal shoots.

ROSE CHAFER (Macrodactylus subspinosus Fab.)

- Indiana J. J. Davis (June 24): Rose beetles reported damaging rose and apple at Crown Point June 18, and attacking grape at LaGrange, June 20.
- Nebraska M. H. Swenk (April 25-May 25): The rose chafer was reported for the first time this spring from Grant County on May 20. Reports indicate that the beetles are to be very numerous in central Nebraska this year.

BRISTLY ROSE SLUG (Cladius isomerus Nort.)

- Ohio E. W. Mendenhall (June 14): The bristly rose slug, Cladius isomerus, is quite bad on roses this spring. Spraying with arsenate of lead is effective.

SUNFLOWER

GOLDENGLOW APHID (Macrosiphum rudbeckiae Fitch)

- Missouri A. C. Burrill (May 31): Macrosiphum rudbeckiae is increasing in great numbers on wild annual sunflowers, but not on the cultivated.

SWEET PEAS

APHIDIIDAE

- Alabama N. B. Johnson (May 24-25\*: Plant lice are serious on sweet peas causing the blooms to have the appearance of being stunted.

I N S E C T S   A T T A C K I N G   M A N   A N D

D O M E S T I C   A N I M A L S

MAN

CHIGGERS (Trombicula irritans Riley)

- Texas F. C. Bishopp (May 28): Chiggers began to appear in the vicinity of Dallas about May 15, and have been steadily increasing through the month.

MOSQUITOES (Culicidae)

- Indiana J. J. Davis (June 24): Mosquitoes have been reported as very annoying at Muncie and Indianapolis.

W. B. Mabey (June 17): Mosquitoes, Aedes dorsalis and others, are beginning to emerge in large numbers practically all over the State. The control campaign at Chinook and Malta is being rendered considerably more difficult by the high water of the Milk River which has covered practically the whole valley and will delay control operations. Indications are that mosquitoes will be considerably more of an economic problem this year than ever before.

PUSS CATERPILLAR (Megalopyge opercularis S. & A.)

F. C. Bishopp (May 15): The first adults of this species noted in this vicinity (Dallas) emerged on the above date. There is some indication that there will be a greater number of these stinging caterpillars than normal this season.

A TICK (Dermacentor andersoni ?)

H. H. Schwardt (June 19): Seven cases of Tularaemia, two of which terminated fatally, have been reported in these two counties (Benton and Washington) during the past two months. Two cases were caused by tick bites, and the others by handling rabbits.

HORSES

HORSE BOT FLY (Gastrophilus intestinalis DeG.)

F. C. Bishopp (May 28): A few flies of this species have been active for several weeks, but the average infestation of eggs per animal probably does not exceed 300.

THROAT BOT FLY (Gastrophilus nasalis L.)

F. C. Bishopp (May 28): This insect has been annoying horses in this vicinity (Dallas) for some time. On the above date animals showed an infestation of several thousand eggs each.

CATTLE

SCREW WORM (Cochliomyia macellaria Fab.)

F. C. Bishopp (May 28): During May many complaints of an unusual number of screw-worm cases have come to this office. It appears that the screw worm conditions are considerably worse than the average for this time of the year. Much interest is manifested in flytrapping campaigns, and several of the county agents are aiding stockmen in this direction. (June 25): The screw worm has been unusually bad throughout southern and western Texas this year. There has been heavy loss among lambs and young calves in a number of areas. In some localities springer cows were shipped before calving in order to avoid losses from the screw worm. Large numbers of new cases appeared throughout June, and the showery

weather continued, thus indicating that screw-worm troubles will extend well into the summer.

STABLE FLY (Stomoxys calcitrans L.)

Virginia

F. C. Bishopp (May 4): A few stable flies were observed biting cattle in the vicinity of Leesburg. As yet they are causing very little annoyance.

Texas

F. C. Bishopp (May 28): This fly is causing some annoyance to dairy cattle, the number per head ranging from 10 to 75. There has been no material change in the abundance of the stable fly during the last month. (June 25): Stable flies are about normal in abundance. Some herds are bothered very little, while others are suffering considerable reduction in milk from the attack of these flies combined with horn flies.

HORN FLIES (Haematobia irritans L.)

Virginia

F. C. Bishopp (May 4): Horn flies are now present in considerable numbers on dairy herds in the vicinity of Leesburg and appear to be increasing rapidly. The number ranges from 10 to 75 per head.

Texas

F. C. Bishopp (May 28): Horn flies have not been so abundant on cattle in the vicinity of Dallas as would be expected from the climatic conditions. The number at this time ranges from 50 to 1,000 per head, but the average is apparently less than usual at this time of the year. Only a few dairymen are using fly sprays. (June 25): Early in June horn flies were very abundant in this vicinity (Dallas) and caused considerable losses to the dairymen. They decreased slightly toward the end of the month, and on this date the average number per cow ranges from 200 to 3,000. They are also causing great annoyance to range cattle in the vicinity of Menard. They are especially abundant along the river, where the cattle are keeping up a constant fight against them.

BLACK BLOWFLY (Phormia regina Meig.)

Virginia

F. C. Bishopp (May 5): A number of cases of maggots in wounds and in herds of cattle after dehorning have occurred in the vicinity of Leesburg recently.

OX WARBLE (Hypoderma bovis DeG.)

Virginia

F. C. Bishopp (May 4): A number of herds of cattle examined show an average infestation of this grub of about one per animal (Leesburg). Most of the grubs are mature, but some are still in the third instar.



MOSQUITOES (Culicidae)

exas F. C. Bishopp (May 28): Mosquitoes have been causing great worry to livestock in the bottom lands this spring. In some instances it was necessary to remove the cattle from the bottoms on account of the abundance of mosquitoes.

TUMBLE BUGS (Canthon sp.)

exas F. C. Bishopp (June 25): Tumble bugs are present in the section of Menard in tremendous numbers. They are completely breaking up the manure on the range, and in some instances they entered flytraps in great numbers.

POULTRY

CHICKEN MITE (Dermanyssus gallinae Redi)

exas F. C. Bishopp (May 28): Chicken mites have caused about the usual amount of annoyance and loss during the brooding season this year. They have been worse than normal where active control measures were not put into effect.

TURKEY GNATS (Simulium meridionale Riley)

nsas J. W. McColloch (May 27): Turkey gnats were sent in from Delphos where they were said to be causing some loss to chickens. The trouble was confined to farms on river bottom lands.

I N S E C T S I N F E S T I N G H O U S E S

A N D P R E M I S E S

HOUSE FLY (Musca domestica L.)

exas F. C. Bishopp (May 28): This fly has continued abundant throughout the spring, and has caused considerable annoyance about dairies and farm dwellings.

WEBBING CLOTHES MOTH (Tineola beselliella Hum.)

braska H. H. Swenk (April 25-May 25): More than the usual number of complaints of injury by webbing clothes moths have been received during late April and May.

FLEAS (Siphonaptera)

diana J. J. Davis (June 2): Several reports of fleas infesting farms and other outbuildings were received the past month from the southern half of the State.

Texas

F. C. Bishopp (May 28): About the usual number of cases of house hold and yard infestations of dog and cat fleas have been reported during the month of May. (June 25): Flea infestations of houses and outbuildings have occurred in about the usual number of cases throughout June.

BLACK CARPET BEETLE (Attagenus piceus Oliv.)

Nebraska

M. H. Swenk (April 25-May 25): More than the usual number of complaints have been received of injury by the carpet beetle, Attagenus piceus, during late April and May.

LARDER BEETLE (Dermestes lardarius L.)

Nebraska

M. H. Swenk (April 25-May 25): The larder beetle, Dermestes lardarius, was reported during the last week in April as overrunning the kitchen and pantry of a home at Utica in Seward County.

POWDER POST BEETLES (Lyctus sp.)

Indiana

J. J. Davis (June 2): Powder post beetles, Lyctus sp., have been reported destructive to building timbers from Seymour, Hartford, Wavay, Napanee, and Columbus.

SILVERFISH (Lepisma sp.)

Indiana

J. J. Davis (June 24): Silverfish reported severely damaging rugs, drapes, and other furnishings, including doilies at Elnora.

CONFUSED FLOUR BEETLE (Tribolium confusum Duv.)

Texas

F. C. Bishopp (June 25): A number of complaints of this insect have come to the laboratory from housewives. They have also caused considerable losses by infesting flour and similar products in stores where goods have been exposed for any length of time.

CLOVER MITE (Bryobia praetiosa Koch)

Nebraska

M. H. Swenk (April 25-May 25): A report of a very annoying infestation of a residence in Omaha with the clover mite, Bryobia pratensis, was received during the first week in May.

BOOK LOUSE (Troctes divinatoria Mill.)

Texas

F. C. Bishopp (June 25): A number of reports of book lice infesting furniture have been received at the laboratory during June.

SUCKING DOG LOUSE (Linognathus piliferus Britton)

Texas

F. C. Bishopp (May 28): This louse is said to be quite common in the vicinity of Dallas during the spring. Numerous cases are reported by veterinary hospitals of this city.

ANTS (Formicidae)

Missouri A. C. Furrill (June 14): Have prevented use of porch for over ten days from June 2 to 13. They appeared by the thousands and crawled over persons sitting on the porch. I think this record on swarming of nocturnal yellow ants (Lasius claviger) on a front porch is the first case of the kind where continuous swarming constituted a household annoyance. As is well known, the swarming of the winged sexes once or twice a year is too infrequent to constitute more than a one-day annoyance. The ants here recorded are notorious for keeping up their swarming activity after evening, for days and sometimes weeks. I have never taken this species in a dwelling and had never thought of this as a household pest, But I can see where their home is made under a stone porch, where slabs are laid in cement on sand after excavating soil so that the stone slabs are within 2 inches of the level of the soil. It made an ideal home so that they could swarm on all sides of the porch where people pass and prevent their using the porch for two weeks, during the period from 5 to 8 P.M. The workers of this species did not accompany any of the winged ants very far into the daylight.

Mississippi R. W. Harned (June 22): The tiny black ant, Monomorium minimum Buckley, has been causing annoyance to a number of housekeepers in Starkville. One housekeeper stated that they seemed to be more fond of grease than anything else.

Mississippi R. W. Harned (June 22): Specimens of the ill-smelling ant, Iridomyrmex analis Andre were sent to this office by State Plant Board inspector Chesley Mines, from Eden. He stated that they were infesting a house there. This species, Prenolepis (Nylanderia) sp., has been taken in a drugstore at Indianola recently. The ants were probably feeding on sweets, although the correspondent did not say so.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi R. W. Harned (June 22): Specimens of fire ants, Solenopsis geminata Fab., sent in from Ocean Springs were noted to be feeding on the fourth instar of the walnut caterpillar, Datana integerrima. The male and female phases of the fire ant have been observed to emerge from their nests at A. & M. College on May 24 and June 4.

ARGENTINE ANT (Iridomyrmex humilis Mayr )

Mississippi R. W. Harned (June 22): Winged specimens of male Argentine ants were sent to this office from Pascagoula during the last of May. This species has recently been found at Orange Grove.

TERMITES (Reticulitermes spp.)

- Indiana F. J. Davis (June 2): Termites show the same activity and abundance as in former years and reports of damage to dwellings, houses, public buildings, and greenhouses have come from many localities in the State.
- Missouri A. C. Burrill (June 8): About one-third of framework of house damaged by Reticulitermes flavipes. They seem to be in the heart of the timber.
- Nebraska M. H. Swenk (April 25-May 25): Last month reports of damage by the termite Reticulitermes tibialis Banks from Douglas, Nemaha, Lancaster and Phelps Counties were recorded. Since April 25, more reports of damage to buildings have been received from Julian and Auburn in Nemaha County, Falls City in Richardson County, Franklin in Franklin County, and Beaver City in Furnas County. Two residences at Franklin are reported as badly injured, while several houses and granaries are heavily infested in the Beaver City vicinity. (May 25-June 25): During the period covered by this report, additional instances of damage by termites have been received from Omaha, where they were seriously injuring a residence, from Franklin, Franklin County, where they were also injuring a residence and killing the elm shade trees about it, and from Ashland, Saunders County, where they were killing the trees on several properties in one section of the town.
- Kansas J. W. McColloch (June 20): More termites than usual and injury to woodwork in dwellings and buildings. At Paxico the high school is infested. Dwellings have been injured at Lacrosse, Talefie, Lorraine, Frankfort, Manhattan (three houses). Buildings reported infested at Tamego, Frederick, Lorraine, and Larned. Fruit trees are being killed at Frederick.

T. E. Snyder (June 30): Number of Cases of Termite Damage to Buildings Mainly by Subterranean Species of Reticulitermes, July 1, 1926, to July 1, 1927, in the United States (and U. S. Insular Possessions) and nearby Tropics.

<u>State</u>	<u>Number of Cases:</u>	<u>State</u>	<u>Number of cases</u>
Alabama.....	2	Indiana.....	
Arizona.....	4	Iowa.....	
Arkansas.....	5	Kansas.....	
California.....	69	Kentucky.....	
Delaware.....	3	Louisiana.....	
District of Columbia.....	81	Maryland.....	
Florida.....	8	Massachusetts.....	
Georgia.....	5	Mexico.....	
Territory of Hawaii.....	16	Michigan.....	
Illinois.....	29	Mississippi.....	
		Missouri.....	
		Nebraska.....	



<u>State:</u>	<u>Number of cases</u>	<u>State</u>	<u>Number of cases</u>
New Hampshire.....	6	Pennsylvania.....	19
New Jersey .....	5	Rhode Island .....	1
New Mexico .....	1	South Carolina .....	19
New York .....	16	Tennessee .....	12
North Carolina .....	19	Texas .....	17
Ohio .....	25	Virginia .....	16
Oklahoma .....	3	West Indies	
Canal Zone, Panama .....	4	(Hayti, Cuba, etc.).....	6
		West Virginia .....	6

# CRICKETS (Gryllidae)

J. J. Davis (June 2): Crickets were reported April 22 from Lafayette as annoying in houses.

## CARPENTER BEE (Xylocopa virginica Drury)

J. W. McColloch (June 20): A report of injury to the woodwork in a house was received from Uniontown on June 11 and from Saffordville on June 17.

## A CURCULIONID BEETLE (Hexarthrum ulkei Horn)

(Monthly Letter of Bur. of Ent. No. 157, May, 1927): On May 8 Wm. Middleton and T. E. Snyder inspected coniferous timbers recently removed from the roof of the White House. The roof was so greatly weakened that it had to be replaced. It was found that the timbers of the roof had been powderposted by a cecidoniid, Hexarthrum ulkei Horn. This insect has caused similar injury to buildings in New York and Washington, and has also damaged flooring in houses in Washington.

## A WASP (Stigmus fulvicornis Fohrer)

R. W. Harned (June 22): A pemphredonid wasp, Stigmus fulvicornis, is doing considerable damage to the piazza floor of a home in Starkville. The wasp constructs small holes about the size of the head of a pin in the flooring in which it appears to be breeding. A number of specimens were noted to be carrying aphids in their mouths which were evidently the food for their young. Several aphids taken from the wasps appeared to belong to at least three different species, one of which A. L. Hemmer thought was Myzus persicae. This is the second house known to be attacked by the wasps and so far as the writer knows the species has never been reported to be of economic importance before this.

# STORED - PRODUCTS INSECTS

## BEETLES (Coleoptera)

H. H. Swenk (May-25-June 25): Reports of injury by stored-grain pests have been much fewer than usual during the period covered by this

report. Those that have been received relate mostly to the several common species of grain beetles.

THE INDIAN MEAL MOTH (Plodia interpunctella Hubn.)

Nebraska

M. H. Swenk (April 25 - May 25): The Indian meal moth continues to be much complained of.

THE FLOUR MITE (Tyroglyphus farinae DeGeer)

Nebraska

M. H. Swenk (May 25 - June 25): In Scottsbluff County a potato cellar with a roof built of alfalfa, sweet clover hay, and barley straw became so heavily infested with the flour mite, Tyroglyphus farinae, that these creatures swarmed over the whole interior and formed a layer on the floor an inch or two deep in spots.

THE INSECT PEST SURVEY  
BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JULY, 1927

Scouting for the European corn borer has been in progress for only three days, as the seasonal development is late. Scouting up to this date has been limited to confirmation of the presence of the borers in the counties on the border of the Quarantine area and the crews are reporting them in these counties in numbers at least as great as those found in 1926.

Throughout the eastern part of the United States one of the most conspicuous features of the month was an unusual abundance of aphids on a great variety of crops and ornamental plants. Shade trees in many places were almost black with sooty mold.

The alfalfa weevil has advanced from about 40 miles west of the Nebraska-Wyoming line to about 8 miles west of that line.

The Hessian fly seems to be about normally prevalent throughout the wheat belt with the exception of the Kansas area, where it is estimated that 20,000,000 bushels of wheat were destroyed by this insect.

Allowing for the alarm caused by the European corn borer, the common stalk borer appears to be unusually prevalent throughout the Middle Atlantic, East-Central, and West-Central States.

The black cutworm continued throughout the month to be a serious pest in the recently flooded areas of Mississippi and several points in Indiana and Nebraska.

Scouting for the Japanese beetle outside the area now under Quarantine has been in operation about one week. It is too early to tell whether there will be extensive spread of the general infestation but a strong movement to the south is indicated.

In the Ohio River Valley the codling moth was somewhat later than usual in emerging. This, coupled with the destruction of the fruit by frost, has very materially reduced the population of this insect.

An interesting note has been received from Maine reporting destruction of fruit buds by elaterid adults. This type of attack has been recorded for several years from the Pacific Northwest.

In Georgia the oriental fruit moth has spread from the few orchards where it was recorded in 1926 to the entire Fort Valley district.

The plum curculio has been unusually prevalent and destructive over the entire Atlantic seaboard.

Owing to unusual weather conditions the cherry maggot was so greatly delayed as to render it of no importance to the cherry crop in Michigan.

been

Mealybug infestations have materially heavier than during last year in the southern California citrus belt. During the month of May of this year, the Los Angeles County insectary liberated 1,612,000 *Cryptolaemus* beetles, and during April another 500,000 were liberated to control this pest.

One of the interesting features of the season has been the finding of the Mexican fruit worm in Texas early in June. Specimens were collected at Mission, Hidalgo County and two points in Cameron County.

The Mexican bean beetle has very materially increased its area of infestation. It has advanced eastward to Washington and Frederick Counties in Maryland; in Virginia, to Norfolk and the Government Experimental Farm at Arlington near Washington, D. C.; in North Carolina, it has spread northeastward to Wake and Robeson Counties; northward in Indiana to Indianapolis and Richmond and westward to Owen and Dubois Counties; in Pennsylvania, to Erie County; and in Michigan, to Monroe County.

The seed corn maggot has been quite prevalent in parts of New York, Michigan, and Iowa.

Though unusually late in appearing in the pepper fields of California the pepper weevil is now well spread over the pepper-growing section and the present indications are that the loss will be heavy this year.

The boll weevil survived the winter in better condition than last year in North Carolina, South Carolina, and Mississippi, while the records indicate that survival was lower than last year in parts of Georgia, Alabama, and Louisiana. Later reports indicate that this insect is generally more destructive than last year in North Carolina, central Georgia, Alabama, and Mississippi. Little boll-weevil damage is reported from South Carolina, Louisiana and Texas.

The cotton flea hopper situation is decidedly better than last year, practically no damage being reported from any part of the cotton belt.

The cotton leaf worm has stripped the cotton as far northward as San Marcos and eastward to Houston in Texas. In general this insect has not been reported over the eastern part of the cotton belt as yet. A single specimen of the leaf worm has been reported from Tennessee.

The tussock moth is generally more prevalent than usual over the Middle Atlantic and East Central States extending westward to eastern Iowa and Nebraska.

OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA, FOR JULY, 1927

Grasshoppers of several species are very heavily infesting open grass ranges in south-central British Columbia from Ashcroft to Quesnel. Cattle country comprising some 2,000 square miles is badly infested and there is danger of the range grasses being seriously reduced.

The clover root borer is gradually exterminating red and alsike clovers throughout the north end of the Okanagan Valley, and adjoining areas, in British Columbia.

A light infestation of the potato stem borer is reported throughout the southeastern counties of New Brunswick, affecting a variety of field and garden plants.

Reports of severe wireworm injury have been received from points in southern Quebec, southern Manitoba, western Saskatchewan, and Vancouver Island.

Observations at points in southern Quebec and along the St. Lawrence River show the onion-maggot infestation to be, in general, more severe than last year, from 40 to 80 per cent of plants being infested.

The spruce budworm is heavily infesting balsam, fir, and spruce over an area of several hundred square miles north of Thor Lake, Ont. This outbreak has been in progress since 1922, with the result that the fir is largely dying or dead and the spruce growth seriously retarded.

Eighty-eight per cent of cocoons of the larch sawfly examined in the Spruce Woods Reserve, Manitoba, were found to be parasitised with the introduced parasite, Mesolius tenthredinus Morl. Adults of this parasite are being liberated at points in Eastern Canada.

On the mainland east of Moose Island, in the vicinity of Lake Winnipeg, Manitoba, the spruce budworm has entirely killed out mature balsam and has weakened white spruce. A large percentage of the latter is being killed by the bark beetle Ips perturbatus Eich.

The white pine weevil is infesting the terminal shoots of young jack pine trees on the Sandilands Forest Reserve, Manitoba.

There is a general and heavy infestation of the box elder plant louse on Manitoba maples in Saskatchewan.

The satin moth was responsible for complete defoliation of infested poplar trees in the Victoria district, B. C., this summer.

With the completion of bark-beetle control work in the Aspen Grove district, the last of the bark-beetle outbreaks in yellow pine in British Columbia has been brought under control, with a consequent saving of millions of dollars worth of valuable timber.

In the Niagara peninsula, Ontario, the pear psylla heavily infested unsprayed orchards and orchards that were sprayed too late.

The saskatoon sawfly, Hoplocampa halcyon Nort., is abundant and widespread in southern Manitoba, where it destroyed 75 per cent of saskatoon berries.

Aphids of many species have been reported unusually abundant in western Nova Scotia, the Niagara peninsula, Ontario, and central Saskatchewan. Serious infestations of the green apple aphid on young apple trees are reported in the Okanagan Valley, British Columbia.

Rose leafhoppers were very abundant on roses in June and apples in July, in the Vernon district, British Columbia.

Severe outbreaks of the apple leaf miner, Albinotrypa vicarialis Zell., have occurred in apple orchards of the Annapolis valley, Nova Scotia, where the insect is more numerous than ever previously recorded.



GRASSHOPPERS (Acrididae)

- Ohio T. H. Parks (July 25): We anticipate no damage by grasshoppers this year.
- South  
Dakota H. C. Severin (July 18): There are no grasshoppers to speak of this year
- Nebraska M. H. Swenk (June 25 - July 25): A few reports only of injury by grasshoppers are being received. There has been a moderate hatch of these insects in the North Platte Valley, with some threat of serious injury, and during the third week in July a few reports of an abundance of grasshoppers in alfalfa fields were received from scattered localities along the eastern edge of the State.

WHITE GRUBS (Phyllophaga sp.)

- Iowa C. J. Drake (July 12): White-grub injury, brood "A," is beginning to show up in the entire eastern half of the State with a few localities in the western half.
- Nebraska M. H. Swenk (June 25 - July 25): Since the middle of June, scattering complaints of damage by white grubs to strawberry beds and rose and flower gardens have been received.

APHIDAE

- Ohio T. H. Parks (July 25): Aphids have had their inning this year. Almost every crop suffered more than usual. Spiraea led in the shrub line. Potatoes and tomatoes were damaged in localities by Illinoia solanifolii. Green apple aphid appeared in many orchards and damaged young trees. A field of sugar beets in Lucas County was found to be almost destroyed by aphids July 22. We have had the most severe visitation in years. Aphids on maple trees are now about gone, being controlled by parasites and predators.
- Illinois C. C. Compton (July 9): Many species of plant lice are unusually abundant at this time. Cabbage is suffering most.
- Alabama J. M. Robinson (June 30): Plant lice are showing up in spots in central and southern Alabama. However, the parasites and predacious forms are apparently keeping them considerably reduced

A WIREWORM (Melanotus spp.)

- Minnesota A. A. Mail (July 5): On a recent trip throughout the southwestern sections of the State, I found two wireworms which appeared to be doing the heaviest damage and these I am going to concentrate on as the major wireworm pest in Minne-

sota. The most abundant is the dark brown, very cylindrical larva which I think is Melanotus. In an infested field I obtained a few beetles which I take to be the adults of the larvae. (Specimens determined by J. A. Hyslop as Melanotus sp.)

## CEREAL AND FORAGE - CROP INSECTS

### MISCELLANEOUS FEEDERS

#### GREEN BUG (Toxoptera graminum Rond.)

Minnesota

A. G. Ruggles (July 15): Toxoptera graminum was found thinly distributed over a wide area in southern Minnesota late in June, the first ones found being isolated migrants. In a few places, on very late grain, there has been considerable increase and slight injury seems likely. In most fields the grain is well headed and little increase of Toxoptera has occurred.

#### PEA APHID (Illinoia pisi Kalt.)

Wisconsin

J. E. Dudley (June 25): The general distribution and establishment of aphids in pea fields, also alfalfa and clover, would seem to justify the prediction that they will be more than usually abundant in July, especially if the weather turns hot. It is possible, however, that the aphid's enemies, particularly syrphids, may be able to keep the infestation below normal.

#### ARMYWORM (Cirphis unipuncta Haw.)

Missouri

L. Haseman (June 28): During the month two complaints were received with samples of specimens of the regular armyworm though no epidemic has developed.

Nebraska

M. H. Swenk (June 25 - July 25): Reports of commercial damage by the armyworm were not so numerous as the cool weather seemed to indicate they would be, but the larvae were quite commonly and generally distributed in grass and grain fields over the southeastern part of the State.

### WHEAT

#### HESSIAN FLY (Phytophaga destructor Say)

Ohio

E. W. Mendenhall (July 6): Clark County has about 13 per cent of Hessian fly infestation according to the recent wheat-field survey (July 8): Champain has about 8 per cent Hessian fly infestation according to the recent wheat field survey. A reduction over last year. So much for better cooperation in the proper time of seeding (July 14): Logan County has 15½ per cent Hessian fly infestation. By inspection they are found now in the "flaxseed" state or resting stage. Wheat was sown rather late but there was a lot of volunteer wheat which may be the cause.

T. H. Parks (July 25): The annual wheat survey has been completed in Ohio. Thirty-four counties were inspected and the percentage of Hessian fly infestation determined in each. The situation is satisfactory in the southern one-third of the State or south of a line drawn through Zanesville, Columbus, and Springfield. It increases in the north central belt, and the northern half of the State has had a rapid increase in infestation. Four counties in northwestern and one county in northeastern Ohio now have between 40 and 50 per cent infestation of the straws. The average infestation for the State is 20.5 per cent compared with 9 per cent in 1926. The present crop did not suffer much owing to good growing weather and the most of the infested straws remained upright. The rapid increase in the infestation was due to the presence of volunteer wheat which received the eggs of the fall brood last year and which was kept growing in the old stubble fields by abundant fall rains. We shall make an effort to hold off seeding this fall and with normal fall weather, expect to win out.

Michigan

R. H. Pettit (July 18): The Hessian fly appears to be coming back with us here and there. We have no facilities for making a survey over the State, but we find it in moderate numbers wherever we look.

Nebraska

M. H. Swenk (June 25 - July 25): The unusually large 1926-27 winter wheat crop of Nebraska came through harvest without any commercial damage whatever by the Hessian fly.

Kansas

J. W. McColloch (July 21): There has been no material change in the Hessian-fly situation since my last report. I might say that preliminary estimates indicate that this insect reduced the wheat crop about 20,000,000 bushels.

#### WHEAT STEM MAGGOT (Meromyza americana Fitch)

Nebraska

M. H. Swenk (June 25 - July 25): During the last few days in June and the first two weeks of July, the wheat stem maggot was responsible for some serious damage to wheat and rye in the northeastern portion of the State, from Greeley County northeast to Cedar County and northwest to Boyd County. The injury was mostly confined to scattering heads through the fields, but one Cedar County farmer reported that the pest had destroyed about one-fourth of his crop of fall rye.

#### WHEAT STRAW WORM (Harmolita grandis Riley)

Missouri

L. Haseman (June 28): Farmers have been reporting small injury from the work of the straw worm. It is no more abundant than in most seasons but has attracted some attention.



ARMYWORM (Cirphis unipuncta Haw.)

Kansas J. W. McColloch (July 20): Last month I reported the wheat head armyworm as injurious in several localities. Field investigations since then have shown that most of the damage was due to the true armyworm which took on the habits of the wheat-head armyworm. In all cases a few wheat-head armyworms were present.

PLAINS FALSE WIREWORM (Eleodes opaca Say)

Kansas J. W. McColloch (June 23): The beetles of this species are unusually abundant in the wheat fields at Meade.

SMUT BEETLE (Phalacrus politus Melsh.)

Nebraska M. H. Spenk (June 25-July 25): During the last few days in June and the early part of July, there were a few reports of the presence of Phalacrus politus in abundance in fields of smutted wheat.

A THRIPS (Prosopothrips cognatus ?)

Kansas J. W. McColloch (July 9): A farmer sent in several thousand of these thrips from a wheat field near Paradise. He said the wheat in this field was poorer than in adjacent fields. From the number of specimens sent in this thrips was undoubtedly very abundant.

CORN

CHINCH BUG (Blissus leucopterus Say)

Ohio T. H. Parks (July 25): While a few newly hatched chinch bugs were found in the wheat during the annual wheat insect survey, no report of damage has come from any section of Ohio. The numerous rains of the fall and spring have probably been responsible for the absence of this pest.

North Carolina Z. P. Metcalf (June 1): This pest is more abundant this month than last; also more abundant this year than last.

W. A. Thomas (June 16): On June 14, it was observed that this insect was doing serious damage to growing corn on a near-by farm. The attack had just begun on the edge of a 5-acre field adjacent to a field of spring rye, which had recently been turned under. Only three rows adjacent to the old rye field showed serious injury. Of these, several of the small plants, from 10 to 15 inches high, had been killed. The average size of the plants, 3 to 4 feet, seemed less seriously affected. 100 per cent of the plants on these rows were infested, the large masses of insects being very conspicuous on the stalks and about the bases of the plants. Further spread of this infestation was definitely checked by treating infested plants with dust treatment.



C. H. Brannon (July 21): Has been especially destructive on corn and small grains in Pitt and Robeson counties this year. Much damage has been done to corn crop farther east and south.

South  
Dakota  
Nebraska

H. C. Severin (July 18): No chinch bugs to speak of this year.

M. H. Swenk (June 25 - July 25); Although the mortality of the chinch bug was apparently not excessive during the past winter, and the pest started the season with a menacing abundance in many parts of southeastern Nebraska, the protracted period of subnormally cool weather that occurred during May and June slowed up the development of the first brood, while in most localities timely cold rains proved fatal to a large percentage of the young of this brood. The net result has been far less serious injury by this insect than was threatened at the close of the winter. In only one area in the State did the infestation develop to the point of an outbreak. This area included the whole of Lancaster County, about the northwestern one-fourth of Gage County, the southern edge of Gage County, and the southern edge and northwestern corner of Cass County. In this comparatively limited area the bugs started moving on July 2 and the movement continued for the next 10 days. Oil-line barriers were constructed in many fields over this area during the period mentioned, as the bugs moved from the wheat into the near-by cornfields. Outside of this area the chinch bug apparently did no serious or commercial damage to corn during the migration period.

Kansas

J. W. Mc Colloch (July 20): Rains have checked the chinch bug and the injury this year is materially less than last year. Scattered reports indicate local damage in several parts of the State. The second brood is just beginning to appear.

EUROPEAN CORN BORER (Pyrausta nubilalis Hübner.)

Ohio

L. H. Worthley (June 23): Scouting for the European corn borer has been in progress only three days as the seasonal development is late. Eggs are now present in the fields in considerable numbers and some larvae are as far along as the fourth instar. The scouting up to this date has been limited to confirmation of the presence of the borers in the counties on the border of the quarantine area and the crews are reporting them in these border counties in numbers at least as great as those found in 1926.

CORN EAR WORM (Heliothis obsoleta Fab.)

Ohio

T. H. Parks (July 25): Growers of early sweet corn in the Sciota Valley report the heaviest damage in their experience from the corn ear worm. Our first mess of green corn was 90 per

cent infested. This is unusual for early corn in central Ohio. Perhaps the mild winter had something to do with this as they are not known to survive the average winters in Ohio.

Kansas J. W. McColloch (July 20): The corn ear worm is somewhat more abundant than usual. The insect is present throughout the State. There has been considerable injury to the tassels of corn at Lam

SOUTHERN CORN STALK BORER (Diatraea zeacolella Dyar)

Maryland W. R. Walton (July 29): On July 25th, Mr. James McMurtrey of the Bureau of Plant Industry submitted specimens of corn stalks heavily infested by this species collected on fair grounds at Upper Marlboro on popcorn. He stated that there had occurred total destruction of from 400 to 500 plants on experimental plots. On July 26th, Mr. James U. Dennis of Trappe, Talbot County, submitted specimens of field corn stating that serious injury to it had been done by the insect. Both larva and pupa stages of the insect were present.

North Carolina C. H. Brannon (July 20): Generally destructive to late-planted corn.

South Carolina J. O. Pepper (July 11): Cornstalks infested by this insect have been sent in from Florence County. In five stalks there were an average of three larvae per stalk.

STALK BORER (Papaipema nebris nitela Guen.)

Massachusetts A. I. Bourne (July 25): From our indications to date, the stalk borer for some reason or another is not so abundant as is usually the case.

New York E. P. Felt (July 25): This insect has been unusually abundant and destructive in widely separated sections of the State, working in young corn and various thick-stemmed plants. Possibly a portion of the reports are due to the present keen interest in the European corn borer and its work.

Maryland P. D. Sanders (June-July): Corn has been injured seriously over the State by the common stalk borer. Farmers are generally alarmed over its presence, believing it to be the European corn borer. The cold rainy spring no doubt has made parasitism ineffective in holding the stalk borer in check, as normally it is of slight concern in this State. It also attacks dahlia and hollyhock.

Pennsylvania M. F. Crowell (July 5): On June 28 the writer noticed the common stalk borer in about the second and third instars feeding in corn that was about a foot high at North East. A report came

to this office on July 1 that this insect is doing quite a bit of damage to flower beds in Erie.

Ohio

E. W. Mendenhall (July 8): The stalk borer is very bad in Champaign County in corn plants and some think they have the European corn borer; but when investigation is made we find it is the common stalk borer.

T. H. Parks (July 25): Damage from the stalk borer has been more abundant this season than usual. Specimens have been received almost every day with the fear expressed that they may be the European corn borer. Larvae are about full-grown at this writing.

Indiana

H. F. Dietz (June 28): The common stalk borer is being reported within the last few days, June 22 to June 24. Most of our records have come from Marion County where in a number of cases small garden lots have been seriously injured by unusual numbers of these worms. At Danville this insect was found tunneling wheat, and in Madison County over 50 per cent of a half-acre plot of sweet corn was destroyed.

In city flower gardens this borer has also been reported on such flowering plants as cosmos, dahlias, and zinnias and such truck crops as potatoes and tomatoes.

J. J. Davis (July 19): One of the outstanding pests of the month was the common stalk borer. Reports were first received June 22 and have continued up to the date of this record, being most numerous the last few days in June and first week or ten days in July. Greatest damage reported to corn, but also to sweet and popcorn. Next crop in importance was tomato. Other crops attacked included potato, wheat, oats, mint, hollyhock, dahlia, and rhubarb, most of the reports coming from the northern two-thirds of the State. The general prevalence of this borer throughout the State and the small size of the corn have resulted in conspicuous losses to corn growers and others.

H. F. Dietz (July 21): Reports of the stalk borer, continue to be received from various parts of the State. The hosts, of course, are quite variable and whenever the insect is found in corn the writers immediately think they have the European corn borer. Reports of this insect in dahlias, tomatoes, asters, and zinnias are common.

Michigan

R. H. Pettit (July 18): This is the worst year so far that we have ever had with the common stalk borer. It is sent in sometimes a dozen times a day with the request for information concerning it.



Iowa

C. J. Drake (July 12): The common stalk borer is unusually abundant in Iowa this year. Over 100 different kinds of plants have been found infested by the stalk borer at Ames. Specimens have been received from almost every county in the State, and in some counties a considerable quantity of corn has been badly injured or even entirely destroyed by the insect.

L. Haseman (June 28): Throughout the month the outstanding insect so far as inquiries are concerned has been our common native stalk borer. Farmers have suspected that it might be the European corn borer. It has been unusually abundant this month.

Nebraska

M. H. Swenk (June 25 - July 25): Complaints of injury by the stalk borer, that began to be received during the second week in June from southeastern Nebraska, as mentioned in my last report, increased to the status of an outbreak during the last week in June and the first three weeks in July. Complaints of injury were received from practically every county in Nebraska lying east of the 98th meridian, and in the Platte River Valley the area of injury extended west to the 100th meridian. Over one-half of the complaints referred to injury to corn, which in some instances assumed quite a serious aspect; otherwise, the complaints referred mainly to injury to potatoes, tomatoes, and thick-stemmed flowers, like hollyhock, etc.

Kansas

J. W. McColloch (July 20): The stalk borer has been a predominating insect in our correspondence this month, owing to the fact that every one is looking for the European corn borer. Many farmers are reporting heavy losses from this pest. In a few cases the damage has been severe enough to cause abandonment of the crop.

Iowa

C. J. Drake (July 29): A telegram July 29 reads "Big armyworm outbreak in Hardin and Franklin Counties."

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli Guen.)

Iowa

C. J. Drake (July 12): The cutworm Prodenia ornithogalli Guen. has been found in considerable numbers in Story, Woodbury, and Webster Counties during the first part of July.

Mississippi

R. W. Harned (July 25): The yellow-striped armyworm ranks second in importance among the cutworms in the overflowed areas. Between May 16 and July 21, reports with specimens were received from Adams, Bolivar, Tallahatchie, Warren, Washington, and Yazoo Counties.

CUTWORMS (Noctuidae)

Iowa

C. J. Drake (July 12): Cutworms (various species) have been unusually abundant in the State this spring. A number of fields of corn were badly injured or even entirely destroyed.



BLACK CUTWORM (Agrotis ypsilon Rott.)

Indiana

J. J. Davis (July 19): Cutworms have been unusually abundant the past month. Most of them were apparently the greasy cutworm. The first of these late cutworm reports came from Kokomo June 27 where 20 acres of corn were said to have been destroyed. Late reports of damage to corn came from Peru, July 2; Winamac, July 3; Muncie, July 4; Newburgh, July 6; Martinsville, July 7; Rossville, July 9; and Terre Haute, July 14.

Nebraska

M. H. Swenk (June 25 - July 25): During the second and third weeks in July several reports were received of cornfields being injured by the greasy cutworm, boring into the bottom of the stalks of young corn and killing the plants. This injury assumed its most serious development in York County. One 40-acre field near Gresham had about one-third of the stand on several acres taken in this way, while another field of 35 or 40 acres near Lushton suffered a loss of about 10 per cent of the stand because of this injury.

Mississippi

R. W. Harned (July 25): Agrotis ypsilon Rott. continues to be the most important cutworm in the counties that were recently flooded. Between May 25 and July 19, reports of injury by this species accompanied by specimens were received from Bolivar, Yazoo, Quitman, Washington, Warren, Grenada, Tallahatchie, Adams, and Sunflower Counties.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Louisiana

T. E. Holloway & W. E. Haley (June 29): One field of corn near Gulfport was reported by various inspectors as having a peculiar injury. No specimens could be found by anyone, but it appears that the damage was done by the lesser corn-stalk borer. The stalks were in many cases almost girdled at the surface of the ground, so that a strong wind caused them to fall over.

Mississippi

R. W. Harned (July 25): Although a month ago we were receiving complaints every day in regard to the lesser corn stalk borer, during the past three weeks only three lots of specimens have been received. These came from Newton County on July 15 with the report that they were seriously injuring corn, and from Lee County on July 23 where they were attacking corn, and from Jefferson County on July 21 where they were attacking peas.

LINED CORN BORER (Hadena fractilinea Grote)

New York

E. P. Felt (June 27): We have just learned of a heavy infestation in a cornfield in Broome county. (July 25): The lined corn borer has been injurious to corn on recently planted sod in Albany, Columbia, Rennselaer, Broome, and Oneida Counties, and in some instances caused considerable damage.

SMARTWEED BORER (Pyrausta ainsliei Hein.)

Iowa

G. J. Drake (July 12): A large number of caterpillars of the smartweed borer were found in old cornstalks in Iowa this spring. The caterpillars have not been found tunneling the growing corn.

BEET ARMYWORM (Laphygma exigua Hübner.)

California

J. C. Elmore (June 30): Two cornfields near Talbert where ground was flooded in February are heavily infested by the larvae of the beet armyworm. Plants near the patches of pigweed are most heavily damaged. Peppers are also attacked so that treatment is necessary. This same locality was heavily infested by two species of cutworm in April and May. Species not determined

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Mississippi

R. W. Harned (July 25): The southern grassworm has appeared at a number of places in the State in injurious numbers. Specimens have been received from Adams, Warren, Holmes, Leflore, Tallahatchie, Pearl River, Hinds, Marshall, Lowndes, and Sunflower Counties. In some cases considerable damage has been caused to corn but a few reports of injury to cotton have also been received, especially where the worms started on grass that was afterwards removed. Parasites of this species are now very abundant at certain places.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Indiana

J. J. Davis (July 19): The southern corn root worm has been the outstanding pest of corn throughout the State. The first reports came from Brownstown July 2. Following this initial report, records accompanied by specimens were received from Osgood, Tipton, Shelbyville, Marion, Orleans, Rushville, Newport, Evansville, Martinsville, Vincennes, New Harmony, Jasonville, Fairbanks, Crown Point, Petersburg, New Castle, Portland, Washington, and Columbus. Reports are still coming in. The reports read "6 acres destroyed," "abundant and destructive throughout the country," "20 acres practically ruined," and "one-third to one-half of my 29-acre field of corn destroyed." At the present writing the worms are about full-grown.

H. F. Dietz (July 21): One report of the corn root worm was brought in from a farm between Indianapolis and Noblesville where 2 acres of bottomland corn showed considerable damage to the roots caused by the larvae of this insect.

Kansas

J. W. McColloch (July 15): Two reports of injury by the larvae of the southern corn root worm on corn were received since the

Report. One was from Girard on June 22 and the other from Eureka on July 9.

Missouri

L. Haseman (June 28): A few complaints have been received during the last half of the month concerning the corn root worm. The species proved to be the southern one.

CORN ROOT WORM (Diabrotica longicornis Say)

Nebraska

M. H. Swenk (June 25 - July 25): From here and there in the State, beginning the third week in July, reports of falling corn following injury by the western corn root worm have been received.

SEED-CORN MAGGOT (Hylemyia cilicruca Rond.)

Ohio

E. W. Mendenhall (July 6): Very bad in seed corn in Clark County this year.

BAR-WINGED ONION FLY (Chaetopsis aenea Wied.)

Ohio

T. H. Parks (July 25): These maggots have been received from several counties in west-central Ohio with the statement that they were damaging corn.

GARDEN WEBWORM (Loxostege similalis Guen.)

Nebraska

M. H. Swenk (June 25 - July 25): A complaint of injury to corn by the garden webworm was received from Harlan County during the second week in July. The greasy cutworm was also doing injury as above described in this same field.

CURLEW BUG (Sphenophorus callosus Oliv.)

South  
Carolina

J. O. Pepper (July 8): Many cornfields in the Pee Dee section of the State have been infested by this insect during the year and serious damage been done.

WIREWORMS (Elaterridae)

Indiana

J. J. Davis (July 19): Wireworms were reported damaging corn at Marion July 1.

WHEAT WIREWORM (Atriot<sup>e</sup>s mancus Say)

Maine

J. H. Hawkins (July 21): Injury to sweet corn, mainly to seed, causing an uneven stand has been reported. Oats are also attacked, and local areas entirely cleaned out.

SUGARCANE BEETLE (Eutheol<sup>e</sup>a rugiceps Lec.)

Alabama

J. M. Robinson (June 30): Eutheola rugiceps has been fairly active, attacking corn. However, they are not so numerous as they were last year at this date.



South  
Carolina

J. O. Pepper (July 6): Specimens of this insect have been sent in from Saluda County and reported as seriously injuring a field of corn. The particular field has been in sod the past two years, which accounts for the trouble.

CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)

Indiana

J. J. Davis (July 19): A black flea beetle destroyed 10 acres of corn at Brownstown, July 1.

CORN SILK BEETLES (Luperodes spp.)

Alabama

J. M. Robinson (June 30: Luperodes davisii just came in from Whitefield, Ala., attacking cornsilks. It is known as the corn silk beetle.

Mississippi

R. W. Harned (July 25): Specimens of Luperodes varicornis Leach were received from Goss on June 27. Medium injury to corn was reported.

A SCARABAEID BEETLE (Ochrosidia immaculata Oliv.)

Nebraska

M. H. Swenk (June 25 - July 25): A belated abundance of beetles of Cyclocephala immaculata has appeared over southwestern Nebraska during middle and late July.

CORN LEAF APHID (Aphis maidis Fitch)

Kansas

J. W. McCulloch (July 10): The corn leaf aphid is very abundant in the corn and sorghum fields around Manhattan. In some cases corn is showing marked injury. A report from Fredonia states that this aphid is very bad on kafir.

CORN ROOT APHID (Anuraspis maidi-radici Forbes)

North  
Carolina

Z. P. Metcalf (June, 1927): Attacking corn in Henderson County and cotton in Moore County.

Nebraska

M. H. Swenk (June 25 - July 25): The corn root aphid was much complained of during middle and late July from an area in south central Nebraska enclosed between Buffalo, Gosper, and Lincoln Counties. Many fields of younger corn have been largely destroyed by this pest, and in northern Gosper County about three fields out of every four are reported to be more or less seriously infested.

Kansas

J. W. McCulloch (July 1): This aphid was sent in from Hiawatha with the information that it was bad in a cornfield there.



ALFALFA

ALFALFA WEEVIL (Phytonomus posticus Gyll.)s;

Wyoming

M. H. Swenk (July 18): You will be interested to know that our survey last month showed the alfalfa weevil to have advanced from about 40 miles west of the Nebraska-Wyoming line to about 8 miles west of that line. We failed to find the weevil in Nebraska at any point.

SOYBEAN

POTATO LEAFHOPPER (Empoasca fabae Harr.)

North  
Carolina

Z. P. Metcalf (July 21): This pest has proved especially destructive to soybeans and peanuts early in the season.

COWPEAS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Georgia

Oliver I. Snapp (July 20): This insect is more abundant this year than it has been for four or five years. It is doing considerable damage in some cowpea fields.

SORGHUM

KAFIR ANT (Solenopsis molesta Say)

Kansas

J. W. McColloch (July 20): On June 20 the ants were reported destroying the planted sorghum seed before germination at Cedarville. A report from St. George on June 25 stated that a 15-acre field had been replanted four times because of this ant.

GRASS

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

Mississippi

R. W. Harned (July 25, 1927): Reported on Sudan grass at Skene, June 21.

SPITTLE INSECTS (Cercopidae)

Mississippi

R. W. Harned (July 25): Spittle insects are now unusually abundant on Johnson grass in the vicinity of A. & M. College.

A SOLITARY BEE (Andrena perplexa? Smith)

Maryland

P. D. Sanders (May 14): The injury to the lawn was a result of the nest-digging of the female bees. In an area one yard square 63 nests were counted. It is of interest to note that this same species was present in an adjacent lawn in injurious numbers in 1924. A treatment of carbon disulphide emulsion as rec-

commended for the Japanese beetle gave practically 100 per cent kill. The bees did not reappear in 1925. In 1926 the infestation began to build up as the bees were rather numerous but not sufficiently abundant to be injurious. In 1927, however, the infestation was severe. A treatment of carbon disulphide emulsion applied with a garden sprinkler gave excellent control.

## FRUIT INSECTS

### GENERAL

#### APHIDIIDAE

- Massachusetts A. I. Bourne (July 25): Orchard plant lice are very abundant all over the State.
- Missouri L. Haseman (June 28): The month has been notorious for the abundance of plant lice on grape, apple, and plum.

#### LEAFHOPPERS (Jassidae)

- Indiana H. F. Dietz, (July 21): Leafhoppers, species not determined, have caused conspicuous malformation on apple, plum, and Norway maple nursery stock at Indianapolis, Terre Haute, and other scattered towns in the southern half of the State.

### APPLE

#### APHIDIIDAE

- Indiana H. F. Dietz (June 28): The only apple aphids that seem to be abundant are the green apple aphid, and the woolly apple aphid Schizoneura lanigerum Hausm.
- B. A. Porter (July 22): Early in the season all species of aphids were comparatively scarce in apple orchards in southern Indiana. Beginning about June 1, the apple aphid Aphis pomi DeG. increased to tremendous numbers in many orchards, and is still abundant in the vicinity of Vincennes.
- Michigan R. H. Pettit (July 19): Apple aphids have curled the leaves everywhere in the State, and the injury both to the foliage and to the fruit has been very severe. Aphids of all sorts have been plentiful and troublesome. Aphids have been extremely plentiful on Norway maple, smearing the leaves with honeydew and causing the foliage to fall very freely. The leaves are now many of them falling from the trees.

APPLE APHID (Aphis pomi DeG.)

T. H. Parks (July 25): The green apple aphid is now doing damage in some orchards that were visited last week. The insect is calling for control measures and young trees have been heavily infested.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

E. W. Mendenhall (July 12): The woolly apple aphid is very bad this year on apple trees in orchards and nursery stock.

J. J. Davis (July 19): The woolly apple aphid has been reported abundant throughout the southern two-thirds of Indiana and probably occurs in equal abundance throughout the State.

R. W. Harned (July 25): Reported on apple at Vicksburg July 15 and also on apple at Lucedale on July 11.

CODLING MOTH (Carpocapsa pomonella L.)

B. A. Porter (July 23): Conditions on the whole have been rather unfavorable to the codling moth. During the early part of the emergence of the moths most of the evenings were cool, which materially reduced the number of eggs laid. The destruction of most of the fruit crop in this section by a spring frost has been another factor unfavorable to the species. As a result, the total worm population in most orchards in southern Indiana is less than it has been for several years. Second-brood larvae have not yet appeared in appreciable numbers although normally they are hatching in large numbers by this time.

T. H. Parks (July 25): Adults of the summer brood began emerging in considerable numbers at Columbus July 24. The brood is later than usual and spraying for this section is being advised for the last week in July. No emergence had taken place in Ottawa County, northern Ohio, on July 22.

L. Haseman (June 28): In central Missouri the moths of the first brood reached the peak of emergence around the 4th of June, were still emerging in considerable numbers the 14th, and apparently finished the emergence in our cage on the 20th. Young worms began entering the fruit apparently between the 5th and 15th and a few of the oldest worms were approaching maturity from the 20th to the 25th. The pest has been far behind its schedule.

EASTERN TENT CATERPILLAR (Hyalocossoma americana Fab.)

F. E. Brooks (June 27): During a recent automobile trip through the Allegheny Mountains it was observed that tent caterpillars had defoliated many apple and wild cherry trees. Evidently this species



is working southward from the more seriously infested regions of Pennsylvania, New York, and New England.

Tennessee

A. C. Morgan (July 20): The eastern tent caterpillar has been unusually abundant, its unsightly webs completely covering many trees in the vicinity of Clarksville.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Missouri

L. Haseman (June 28): Adults of the second generation began emerging June 20 to 23.

PLUM CURCULIO (Conotrachelus nemophar Hbst.)

Indiana

H. F. Dietz (June 28): Infestation by the plum curculio is unusually severe. Around Indianapolis on such apples as bear fruit the apples show from four to eight stings per fruit. In the Pax Mitchell-Orleans fruit district about 80 per cent of the cherries, of which there is a comparatively light crop, are infested and throughout the State, taking the reports that have been received, this insect is more abundant on cherries than it has been for several years.

APPLE SEED CHALCID (Syntomaspis druparum Boh.)

Massachusetts

A. I. Bourne (July 25): The first flies of the apple seed chalcid were collected in cages in the college orchard July 4 and 5.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

West

Virginia

F. E. Brooks (June 27): Beetles are unusually abundant and are at present ovipositing in apple and other host trees. The abundance of the beetles appears to be due to the scarcity of woodpeckers in orchards during the past winter. A heavy crop of beechnuts last fall supplied winter food for these birds and they remained in the woods to an unusual degree. The downy woodpecker, which is normally destructive to these borers, scarcely left the woods during the winter to obtain food in orchards or at artificial feeding stations. In rather extensive collecting of rearing material of these borers in early spring not an example of destruction by woodpeckers was observed. Often 25 per cent or more of the full-grown larvae are removed from their pupal quarters during the winter by woodpeckers.

APPLE MAGGOT (Phagoletis pomonella Walsh)

Massachusetts

A. I. Bourne (July 25): July 5 the first flies of the railroad worm, or apple maggot, were collected in the orchard. Up until about the 15th they were not collected in any large numbers. By the 15th, however, both in our cage experiments and in the orchard



we found them to be present in considerable abundance, indicating the probability that at least early varieties would be fully as badly hit as was the case last year.

JAPANESE BEETLE (Popillia japonica Newm.)

New Jersey  
and  
Maryland

L. B. Smith (July 22): Scouting for the Japanese beetle outside of the area now under quarantine has been in operation about a week. It is too early to tell whether there will be extensive spread of the general infestation but a strong movement to the south is indicated.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Massachusetts

A. I. Bourne (July 25): The crawling young of the San Jose scale began escaping from under the parent scales July 4 and 5.

Indiana

B. A. Porter (July 23): First-brood crawlers appeared about June 1, but have not been particularly abundant. Very little spotting of the fruit has been observed as yet.

POTATO LEAF HOPPER (Empoasca fabae Harr.)

Indiana

B. A. Porter (July 23): Unusually abundant, and has caused serious curling, stunting, and burning of terminal growth of apple.

EUROPEAN RED MITE (Paratetranychus pilosus Can. & Fanz.)

Connecticut

Philip Gorman (July 23): In spite of the cool weather and heavy rains until July, the mite is causing serious damage in some orchards.

Indiana

H. F. Dietz (July 21): Heavy infestations of the European red mite were found at Indianapolis.

EASTERN FIELD WIREWORM (Phaeotus agonus Say)

Maine

J. H. Hawkins (May 14): Some elaterids were taken at the Experimental Farm at Highmoor. They were found in a young apple orchard climbing around the trees. It was reported that they were eating the buds. This may or may not be true, but they were present there in some numbers during the latter part of April. Unfortunately I received only three. I am sending two of them to you. If you can conveniently give me the identification of these beetles, I would very much appreciate it. (Determined by J. A. Hyslop).

Georgia

Snapp & Swingle (July 21): In 1925 the oriental peach moth infestation in the Fort Valley section of the Georgia peach belt was confined to parts of six commercial orchards. In 1926 the insect could be found in parts of only three of these orchards. A survey during the past week revealed the fact that the insect has spread this year to commercial peach orchards over practically the entire Fort Valley district. It was found throughout orchards to a point 12 miles north, 15 miles south, 6 miles east, and 2 miles west from the city of Fort Valley.

Frequent rains during the fall of 1926 and the early summer of 1927 caused rapid twig growth, which furnished an abundant supply of food for the development of the insect.

The infestation is very light throughout the area described above.

PLUM CURCULIO (Conotrachelus nemuphar Hbst.)

Massachusetts

A. I. Bourne (July 25): Probably the most serious pest of fruit to date, at least the one that is causing the most anxiety to growers, is the plum curculio. It appears to be present in even greater abundance than last year, and even in well sprayed orchards has done a large amount of injury.

Maryland

P. D. Sanders (July): The plum curculio has been unusually abundant this year in commercial apple and peach orchards. The failure to control it is generally attributed to the abundance of the species and the excessive rain during the spraying season which tended to wash off the arsenical.

Georgia

O. I. Snapp (July 20): The peach season is over in Georgia after the shipment of around 12,000 cars. The curculio infestation was heavier this year than at any time since 1923. There were two generations, the second generation attacking the Albetas. The insect gave the most trouble in poorly-cared-for orchards, and in those that received an irregular schedule of sprays.

Missouri

L. Haseman (July 28): Adults of the second brood began emerging June 25 to 28.

Texas

F. C. Bishopp (July 26): Although the first generation of the plum curculio did not appear to be especially abundant, the second generation has caused heavy damage to midsummer peaches. As high as 50 per cent of the ripening fruit has been destroyed in some instances, and many peaches were found to be infested with 3 or 4 larvae. The larvae have been emerging from peaches during the past two weeks.

Georgia

Monthly Bulletin, Bureau of Entomology, No. 157, May, 1927 : O. I. Snapp, in charge of the peach insect laboratory at Fort Valley writes that the first adult curculios there emerged from the soil

on May 24, which is the earliest first-emergence date in seven years. Two full broods are anticipated, and he is expecting second-brood larvae to infest the Hiley peaches this year. The Hiley is a midseason variety.

TARNISHED PLANT BUG (Lygus pratensis L.)

Indiana H. F. Dietz (July 21): Tarnished plant bug injury was found abundant on peach at Burns City, Terre Haute, Washington, and Vincennes.

NORTHERN LEAF-FOOTED PLANT-BUG (Leptoglossus oppositus Say)

Georgia O. I. Snapp (July 23): The plant bug responsible for most of the damage to peaches in Georgia this year as reported on July 20 has been identified by Mr. McAtee as Leptoglossus oppositus.

CHERRY

CHERRY SLUG (Caliroa cerasi L.)

Indiana J. J. Davis (July 19): The cherry slug was reported destructive to cherry from Lincoln, June 30.

BLACK CHERRY APHID (Myzus cerasi Fab.)

Indiana H.F.Dietz (June 28): The black cherry aphid has been abundant in Indianapolis, Danville, Greenwood, and Clermont.

Michigan E. I. McDaniel (July 18): The black cherry aphid has been unusually plentiful this year and has completely ruined the crop so that it was left unpicked in parts of Shiawassee County.

CHERRY MAGGOT (Rhagoletis cingulata Loew)

Michigan R. H/ Pettit (July 18): An unusual situation arose this year in the case of the white-banded cherry fruit fly. Our field cages, maintained for the purpose of determining the dates of emergence of the adult flies in the southern part of the cherry belt, actually produced adults this year after a portion of the cherries had been picked and canned. It would seem, therefore, that the cold season, at least on this occasion, delayed the insects more effectively than it did the fruit. At any rate, no sprays were required in the southwestern part of the State in order to hold the white-banded cherry fruit fly in check.

PLUM

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Indiana H. F. Dietz (June 28): The rusty plum aphid has been recorded abundant in Indianapolis, Danville, and Greenwood.

PEAR

PEAR PSYLLA (Psylla pyri L.)

Connecticut W. E. Britton (July 19): Attacking pear. Many leaves now brown and falling. Both fruit and leaves blackened by sooty fungus growing in the honeydew.

PLANT BUGS

Georgia O. I. Snapp (July 20): Squash bugs, southern green plant bugs, etc., have been very much more numerous in Georgia this year. They have attacked peaches, and are responsible for many ill-shaped and gnarled fruits this year.

APPLE APHID (Aphis pomi DeG.)

Mississippi R. W. Harned (July 25): Reported on pear at Lumberton on July 5.

QUINCE

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Ohio E. W. Mendenhall (July 5): The Japanese quince (*Cydonia*) on the large estates in Springfield are badly infested with the San Jose scale.

PEACH

PEACH TWIG BORER (Anarsia lineatella Zell.)

Indiana H. F. Dietz (July 21): Injury by the peach twig borer was found at Burns City, Terre Haute, Washington, and Vincennes.

Texas F. C. Bishopp (July 25): Very few peach twig borers have been evident in the vicinity of Dallas, until last week, when the larvae were found attacking ripening Elberta peaches to some extent.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Connecticut Philop Garman (July 23): About the same infestation as last year. The early season seems to have been unfavorable. Warm weather in July brought out adults in large numbers.

Ohio T. H. Parks (July 25): Back-yard trees in the city of Columbus show injury from the larvae of this moth on almost every terminal. It is much more abundant than last year. Fruit is becoming infested. Few complaints have as yet come from commercial orchardists.



PLUM WEBSPINNING SAWFLY (Neurotoma inconspicua Norton)

Nebraska

M. H. Swenk (June 25 - July 25): The plum webspinning sawfly was reported as attacking foliage of plum trees in Custer County during the first week in July.

BLUEBERRY

BLACK-LINED CUTWORM (Agrotis fennica Sausch.)

Maine

C. R. Phipps (July 21): This cutworm, in company with Agrotis unicolor Walk., destroyed the blueberry buds on several acres of bushes in Cumberland and Hancock Counties (May 1 to June 14).

GRAPE

GRAPE CURCULIO (Craponius inaequalis Say)

West Virginia

F. E. Brooks (June 27): At French Creek beetles are very abundant on the foliage of wild grapes and are extending their attacks to cultivated grapes. Oviposition has not yet begun, but the fruits will soon be large enough to receive the eggs, and timely spraying will be necessary in order to save the crop. The feeding marks of the beetles are at present conspicuous on the leaves.

GRAPE ROOT WORM (Fidia viticida Walsh)

Missouri

L. Haseman (June 28): In Jackson County one commercial vineyard has been quite badly infested with the beetles during the month, and at Columbia the beetles are more abundant than usual.

GRAPE LEAFHOPPER (Erythroneura comes Say)

Ohio

E. W. Mendenhall (June 28): Grape leafhoppers are very abundant again in the vicinity of Columbus.

North  
Carolina

Z. P. Metcalf (July 21): This pest has proved destructive to all kinds of grapes.

Nebraska

M. H. Swenk (June 25 - July 25): Injury by the grape leafhopper to woodbine foliage continued to be occasionally reported up to the end of June.

GRAPE VINE APHID (Macrosiphum illinoisensis Shimer)

Indiana

J. J. Davis (July 19): The grape aphid was reported abundant at Terre Haute July 24.

CURRENT

CURRENT APHID (Myzus ribis L.)

Indiana H. F. Dietz (June 28): A severe infestation of the currant aphid on currants was reported from Clermont.

IMPORTED CURRENT WORM (Pteronus ribesii Scop.)

New York E. P. Felt (July 25): This insect is common on currant and gooseberry in the Highland Park collections (R. E. Horsey).

PECAN

WALNUT CATERPILLAR (Datana integerrima G. & R.)

South Carolina J. O. Pepper (June 22): Specimens of this insect were received from Denmark and reported as being abundant on pecan.

PECAN BUD-MOTH (Proteopteryx bolliana Sling.)

Mississippi R. W. Harned (July 25): Proteopteryx bolliana reported attacking pecan at Marks and Skene.

A PHYLLOXERA (Phylloxera notabilis Perg.)

Mississippi R. W. Harned (July 25): Phylloxera notabilis was reported as attacking pecan at Helena and Skene.

PECAN LEAF CASE BEARER (Acrobasis nebulella Riley)

Mississippi R. W. Harned (July 25): Acrobasis nebulella was reported as attacking pecan at Holly Springs.

CITRUS

MEXICAN FRUIT WORM (Anastrepha ludens Loew)

exas

R. E. MacDonald (August 1): No further specimens of the Mexican fruit worm have been discovered since June 23, at which time definite determination had been made of 10 specimens at Mission, Hidalgo County and five near Harlingen, Brownsville, and San Benito in Cameron County. Many other suspected larvae collected in April were not reared.

CITRUS MEALYBUG (Pseudococcus citri Risso)

lifornia

Monthly News Letter, Los Angeles County Hort. Comm (June 18): During the month of May the Los Angeles County Insectary produced and liberated in the Citrophilus-mealybug-infested citrus orchards of the County, 1,612,000 Cryptolaemus according to H. M. Armitage, Deputy Horticultural Commissioner, Los Angeles County. These, combined with the half million liberated during April, have made it possible to cover at an early date all properties seriously infested with the mealybug in Los Angeles County, which should permit the control of the pest with a minimum of injury to the trees and fruit. These beetles have been distributed over 364 infested properties representing 3,465 acres of citrus scattered through the Rivera, Downey, North Whittier Heights, Covina, Baldwin Park, San Dimas, LaVerne, Claremont, and San Fernando areas.

Mealybug infestations have been somewhat heavier this season. Short hot spells have aided the development of the mealybug while the prolonged cool weather has retarded the activities of the Cryptolaemus and other native natural enemies. However, the Cryptolaemus are now showing marked activity and rapid control of the mealybug for this season is anticipated.

TRUCK - CROP INSECTS

MISCELLANEOUS FEEDERS

GREEN PEACH APHID (Myzus persicae Sulz.)

Connecticut R. B. Friend (July 14): Aphids are abundant on all truck crops.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Illinois C. C. Compton (July 9): This leafhopper is much more abundant than usual, severely injuring potatoes and beans in the northern section of the State.

BLISTER BEETLES (Meloidae)

Alabama J. M. Robinson (June 30): These beetles have appeared in garden and fields, attacking even soybeans as well as other field crops. The activities of these beetles have slackened according to the reports sent to our office.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Tennessee A. C. Morgan (July 20): The Colorado potato beetle is unusually scarce in the vicinity of Clarksville.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Massachusetts A. I. Bourne (June 28): Potato flea beetles are present in normal abundance.

Indiana H. F. Dietz (June 28): The potato flea beetle was unusually abundant on early potatoes around Paoli. Numerous reports of this insect have been received from Indianapolis, where it has been abundant on tomatoes.

BLISTER BEETLES (Meloidae)

Kansas J. W. McColloch (July 20): On June 26 blister beetles were reported appearing in potato fields at Hill City. A report of injury to potatoes was also received from Woodston on July 12.

Nebraska M. H. Swenk (June 25 - July 25): A few reports of injury to potatoes by blister beetles were received during middle and late July, these principally concerning the striped blister beetle, Ericauta lemiscata Fab., but also in Dawson County the large black blister beetle, E. corvina Lec.



STRIPED BLISTER BEETLE (Epicauta vittata Fab.)

diana

H. F. Dietz (July 21): Severe damage to tomatoes by the striped blister beetle was reported from Franklin.

MARGINED BLISTER BEETLE (Epicauta cinerea marginata Say)

nessee

A. C. Morgan (July 20): This blister beetle is abundant in restricted areas on potatoes and tomatoes in the vicinity of Clarks-ville.

POTATO APHID (Illinoia solanifolii Ashm.)

ssachusetts

A. I. Bourne (July 25): Locally there have been found numerous fields of potatoes which show considerable infestation by the potato aphid. In one or two cases the infestation is heavy enough to threaten injury in the near future unless checked by natural enemies or spraying.

nnecticut

W. E. Britton (July 19): Macrosiphum solanifolii Ashm. is more abundant than last year. Many fields are seriously infested in Milford, Middletown, Canterbury, Hebron, Wethersfield, East Hartford, and Norwich.

CORN EAR WORM (Heliothis obsoleta Fab.)

ssissippi

K. L. Cockerham (June 27): These insects are destroying the fruit of tomato at Biloxi.

POTATO STALK BORER (Trichobaris trinotata Say)

io

E. W. Mendenhall (June 27): Considerable damage to the potato crop by the potato stalk borer was reported from Franklin County this spring.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

io

E. W. Mendenhall (July 21): The potato leafhopper is quite general over the northwestern portions of the State attacking potato.

wa

C. J. Drake (July 12): The potato leafhopper is unusually abundant, and many potato fields have been badly injured by hopperburn. The injury is widespread and occurs throughout the State.

th

rolina

Z. P. Metcalf (June ): The bean leafhopper is more abundant than last year over the whole of the State, attacking Irish potatoes, peanuts, and soybeans.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

io

T. H. Parks (July 25): A field of potatoes was nearly destroyed

in Lake County in June. Have had several reports of injury to seed corn, but no more than in the average year.

CABBAGE

HARLEQUIN BUG (Murgantia histrionica Hahn)

- North Carolina C. H. Brannon (July 20): The harlequin bug has been reported from many sections of the State as very destructive to cabbage and collards.
- Tennessee A. C. Morgan (July 20): One severe outbreak of the harlequin bug has been observed in the vicinity of Clarksville.
- Alabama J. M. Robinson (June 30): Murgantia histrionica is in the usual abundance this year at Auburn.
- L. W. Brannon (July 5): This insect is continuing to be a very serious pest in the locality of Birmingham attacking cabbage, collards, and turnips. First-generation adults were seen in the field on June 3.
- Kansas J. W. McColloch (July 8): The only report of the harlequin bug received so far this year came from Walnut on July 8 as attacking gardens.
- Mississippi R. W. Harned (July 25): A number of complaints in regard to the harlequin bug, some of them accompanied by specimens, have been received from various parts of the State. This insect is apparently more abundant than usual throughout the State. In the early spring there were many complaints received at this office. Now these insects are again attracting considerable attention.

STRAWBERRY

STRAWBERRY LEAF ROLLER (Ancyliis comptana Frohl.)

- Ohio E. W. Mendenhall (July 26): The strawberry leaf rollers are quite bad this year on strawberry plants in southwestern Ohio.
- Indiana H. F. Dietz (June 28): The strawberry leaf roller has been reported as severe at Peru and Goshen.
- Kansas J. W. McColloch (July 6): A bad infestation is reported from a number of strawberry beds at Junction City.

MYRIAPODA

- Indiana J. J. Davis (July 19): Myriapods damaged strawberries at Monticello June 28. Earlier in the season similar injury was reported from Southern Indiana, the myriapods hollowing out the berries.

LATE STRAWBERRY SLUG (Empria maculata Nort.)

Nebraska

M. H. Swenk (June 25-July 25): The last reports of injury by the late strawberry slug were received from northern Nebraska during the second week in July.

STRAWBERRY ROOT APHID (Anuraphis forbesi Weed )

North Carolina

C. H. Brannon (July 21): The strawberry root louse seems to be especially destructive this year in the strawberry section, 50 per cent of the strawberries having been destroyed.

RED SPIDER (Tetranychus telarius L.)

California

Monthly News Letter, Los Angeles County Horticultural Commission, (June 18): Damage by the common red spider has caused a loss of approximately one-half of the second crop of strawberries in the Inglewood and Hawthorne districts according to Mr. Anzai, president of the Japanese Berry Growers' Association. As the spider damages the under side of the leaves, it is impossible to attempt control without damaging the fruit. Very poor results have been obtained in past years with the oil sprays and sulphur dusting. For this reason very few growers have attempted any method of control this year. Aside from the injury to the plant, the damage to the appearance of the affected berries is such that they sell for as much as 75 cents a crate less than unaffected berries of good appearance.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

Iowa

C. J. Drake (July 12): The asparagus beetle is very common around Muscatine, Ames, and Des Moines. In the vicinity of Muscatine new asparagus beds have suffered extensively from the asparagus beetle this spring.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Pennsylvania

N. F. Howard (June 28): The Mexican bean beetle has been reported from Erie, Erie County.

J. N. Knull (July 22): Larvae destroying bush beans at Etters.

Maryland

P. D. Sanders (July 22): This is the first recorded appearance of the Mexican bean beetle in either Washington or Frederick Counties. It is attacking pole and bunch beans. It was present in three gardens at Smithbury and in one field near Frederick.



- Virginia J. E. Graf (July 7): Dr. Harter, of the Bureau of Plant Industry reported yesterday that the bean plants at the Arlington Farm, Va. showed insect injury. Upon investigation by W. H. White of this office the insect responsible for this injury was definitely determined as the Mexican bean beetle. It has also been reported from Norfolk. (July 29): Mr. Poos, of the Virginia Truck Experiment Station reported on July 13 that he collected larvae, pupae, and adults on Kentucky Wonder beans in three backyard gardens. He also states that it has been found in Prince George County and several of the counties lying between the Rappahannock and Potomac Rivers.
- North Carolina R. W. Leiby (July 6): An unprecedented spread of the Mexican bean beetle appears to have taken place this spring and early summer. The line of infestation run in the fall of 1926 extended from Union County northeastward through Alamance and Caswell Counties. The outlying eastern points where the beetle has been found are Raleigh in Wake County on July 5, and Lumberton in Robeson County on June 27, which are approximately 50 and 75 miles respectively east of the 1926 line. Scouting to determine other points of infestation is now being done by J. A. Harris, Assistant. The first-generation pupae are now beginning to appear at Raleigh.
- North Carolina C. H. Brannon (July 20): The Mexican bean beetle has spread eastward into Wake, Robeson, and Cumberland Counties.
- South Carolina J. O. Pepper (July 19): C. O. Eddy reports first-generation adults of the Mexican bean beetle now emerging in large numbers. Injury is increasing rapidly. The area of damage in the infested zone is increasing where eradication occurred during succeeding dry years.
- Indiana J. J. Davis (July 19): The Mexican bean beetle has been more destructive and widespread this season than ever before. The northern range of destructiveness seems to be Indianapolis and Richmond and the western range, Owen, Green, Martin, and Dubois Counties.
- Indiana H. E. Dietz (July 21): The Mexican bean beetle has been reported as destructive from Jefferson, Henry, and Owen Counties.
- Michigan R. H. Pettit (July 21): The Mexican bean beetle has been reported from Lambertville, Monroe County.
- Tennessee A. C. Morgan (July 20): The Mexican bean beetle has appeared in Montgomery County for the first time in injurious numbers. Reports come in from all over the county.
- Tennessee L. W. Brannon (June 28): Damage to beans due to the Mexican bean beetle in the vicinities of Newport, Birmingham, Johnson



City, and Chattanooga is very severe this season. Some patches of beans were completely destroyed. Damage worse than since 1923. Overwintered adults were fairly numerous. Larvae numerous and also pupae. A few first-generation beetles are emerging.

GOLDEN TORTOISE BEETLE (Metritona bicolor Fab.)

Mississippi

R. W. Harned (July 25): Specimens identified as Metritona bicolor were received from Blue Springs on June 29 with the report that they were collected from bean plants.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Mississippi

R. W. Harned (July 25): The bean leaf beetle was collected on beans at Blue Springs on June 29. This insect occurs throughout the State.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Mississippi

R. W. Harned (July 25): Specimens of the southern green plant bug were received from Port Gibson on July 8 with the report that they were seriously damaging pole and lima beans. Specimens were also received from Turnbull on the same date with the information that they were causing serious injury to tomatoes and lima beans.

New York

Rodney Cecil (July 5): The seed corn maggot has caused considerable damage to the bean crop in this section (Geneva). A series of counts in various fields of beans show a loss of from 5 to 30 per cent. The cool weather seems to have delayed emergence of the flies, and beans planted after the 15th of June suffered the most from the maggot. June 15 to 20 is usually considered the best date for planting beans in this section to escape injury from the seed corn maggot, but this year beans planted between the 15th and 20th suffered the most injury.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Wisconsin

J. E. Dudley, Jr. (July 25): Combined attack of all the aphid's enemies was not able to prevent the daily increase of aphids until a severe wind and rain storm on July 11 reduced the infestation until at the present time it is almost negligible. Another rain on the 16th further reduced the infestation from where it has not again risen.

CUCUMBERS AND MELONS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Indiana

J. J. Davis (July 19): The striped cucumber beetle was reported destructive to melons at Rockville, July 7.

- Maine C. R. Phipps (July 21): Diabrotica vittata collected at Monmouth on cucumber and squash. Eggs taken July 7. The insect is widely spread.
- Illinois C. C. Compton (July 17): At this time the striped cucumber beetle has injured cucumbers in the Chicago trucking district much less than usual.
- Iowa C. J. Drake (July 12): The striped cucumber beetle has been extremely abundant in Story County this spring. Numerous reports of injury have also been received from the pickle region of southwestern Iowa.
- Tennessee A. C. Morgan (July 20): The cucumber beetle has caused considerable damage in scattered localities.
- Kansas J. W. McColloch (July 20): The striped cucumber beetle has been very prevalent on cucumbers and melons this year in the following counties: Logan, Decatur, Rooks, Reno, Chase, Marshall, Osage, and Linn.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

- Mississippi R. W. Harned (July 25): The 12-spotted cucumber beetle was feeding on bean and cucumber plants at Boyle on June 29. Moderate damage was reported. This species is unusually prevalent in all parts of the State.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

- Iowa C. J. Drake (July 12): The seed corn maggot did a considerable amount of damage in a melon field near Fayette during the months of May and June.
- Michigan R. H. Pettit (July 25): For several years reports from the Heinz Pickle Company have come in, complaining that maggots were working in the roots of cucumber vines. Finally some of these maggots were obtained in a living condition and bred. The adults prove to be Hylemyia cilicrura as determined by C. T. Greene, United States Bureau of Entomology. Specimens have been reared from Holland, Mich., and also from a farm almost on the line between Indiana and Michigan.

PICKLE WORM (Diaphania nitidalis Stoll)

- Mississippi K. L. Cockerham (June 27): Diaphania nitidalis Stoll was reported as destroying the entire crop of canteloupes on one farm at Biloxi.

COTTON APHID (Aphis gossypii Glov.)

- Indiana J. J. Davis (July 19): The melon aphid damaged cucumbers at Silver Lake June 26.

Mississippi

K. L. Cockerham (June 27): Aphis gossypii was reported as seriously damaging canteloupes and killing many plants on one farm at Biloxi.

### SQUASH

#### SQUASH BUG (Anasa tristis DeG.)

Virginia

W. S. Abbott (July 22): Eggs of the squash bug are much more abundant at Vienna and Fairfax than usual.

South  
Carolina

J. O. Pepper (July 15): Specimens of this insect have been received from various parts of the State and reported as being present in large numbers on squash vines.

#### SQUASH BORER (Melittia satyriniformis Hübner.)

South  
Carolina

J. O. Pepper (July 14): This insect has been found in almost all parts of Spartanburg County and is causing injury.

#### STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Wisconsin

J. E. Dudley, Jr. (June 24): Owing apparently to enforced inactivity of this insect, which emerged from hibernation early in May, beetles with the advent of warm weather are exceedingly ravenous and are concentrated on corners and ends of fields of cucurbits where the plants attacked are completely destroyed in one night. The spread of beetles generally over cucurbit fields has been very slow this spring. Ground beetles and several species of ants attack dead beetles so quickly that it is almost impossible to determine per cent of kill unless observations are taken hourly. Occasionally apparently normal beetles hiding under clods of dirt are found attacked by these enemies.

#### SQUASH BEETLE (Epilachna borealis Fab.)

Tennessee

L. W. Brannon (June 29): Adults of Epilachna borealis were found feeding on squash in this locality (Johnson City). No larvae were seen.

### ONIONS

#### ONION THRIPS (Thrips tabaci L.)

Alabama

R. W. Harned (July 25): Specimens of the onion thrips were collected on onion plants at Wilmer on June 24.

#### ONION MAGGOT (Hylemyia antiqua Meig.)

Louisiana

J. J. Davis (July 19): The onion maggot was reported destructive at Hammond June 30 and at Hamilton July 17.



- Michigan R. H. Pettit (July 18): The onion maggot has been exceptionally troublesome this year.
- Wisconsin J. E. Dudley, Jr. (June 24): Adults issuing from 10-foot check cages over cull onions at the rate of about 75 per day. In some cases 300 have already issued. Excessive rains in May and early June apparently drowned out almost 100 per cent of maggots in certain parts of fields and cull rows which were lowest.
- Iowa C. J. Drake (July 12): The onion maggot has been reported from Clear Lake and St. Ansgar. Injury has not been extensive.

BEET

BEET ARMYWORM (Laphygma exigua Hübn.)

- California A. C. Davis (June 30): In Norwalk practically every plant has one or more worms, and about one in 25 is defoliated. In Huntington Beach about one plant in 10, on an average, is infested. Some areas more heavily infested than this.
- J. C. Elmore (July 5): The outbreak of the beet armyworm which was reported several days ago seems to have subsided rather suddenly. Very few larvae can be found on the plants at this time. Pupae were found to be numerous in the soil two to three inches from the surface where the infestation has been serious. One species of Calosoma (cancellatum)? was taken and several carabid larvae were found feeding on the pupae.

BEET WEBWORM (Loxostege sticticalis L.)

- North Dakota C. N. Ainslie (July 2): The spring brood of adults is appearing in greater numbers than for several years. Emergence has been delayed by the abnormally cold spring. The sugar-beet growers anticipate trouble from this pest this season.

BEET LEAF MINER (Pegomya hyoscyami Panz.)

- Massachusetts A. I. Bourne (July 25): Regarding the beet and spinach leaf miner, Mr. Whitcomb says that several fields of beets in eastern part of Hampshire County have been plowed under because of injury and that other fields were badly infested.

SWEET POTATO

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

- Mississippi K. L. Cockerham (June 27): Rather severe damage to the leaves of sweet potatoes by the banded cucumber beetle at Biloxi has been reported.



TORTOISE BEETLES (Cassidinae)

Mississippi R. W. Harned (July 25): Tortoise beetles were sent to this office on July 11 from Holly Springs where they were reported as damaging sweet potato plants. Three species were present in this shipment of specimens: Metritona bicolor Fab. M. bivittata Say. and Chelymormpha cassidea Fab.

CARROT

CARROT RUST FLY (Psila rosae Fab.)

Massachusetts A. I. Bourne (July 25): Mr. Whitcomb of the Field Station at Altham reports on the carrot rust fly as follows: "Several home garden patches of early planted carrots completely destroyed. Later plantings infested, but not seriously as yet."

PARSNIP

PARSNIP WEBWORM (Depressaria heracliana DeG.)

Illiana J. J. Davis (July 19): The parsnip webworm was received from various parts of the State as possibly the European corn borer. It was always sent in from wild parsnip.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

California J. C. Elmore (July 1): The first field infestation of the pepper weevil this year has been found near Santa Ana. Overwintering adults were found early in April on overwintering plants, but none have been found since in Orange County until July 1. The infestation referred to above is very light at this time. (July 7): A 4-acre field of pimento peppers adjacent to a field of overwintering plants where the weevils were numerous in April of this year was found to be infested. Thirty larvae were taken in butts. No adults were taken. About ten days of warm weather have had some effect on the development of the weevil no doubt. Other infestations are expected in other localities. (July 14): The pepper weevil has been found to be well distributed over the pepper growing section of Orange County in the last few days, and indications are that the losses will be heavy in a large number of fields this year. The adults of the first spring generation have just begun to emerge.

BEET WEBWORM (Laphygma exigua Hüb.)

California J. C. Elmore (June 30): Generally distributed in pepper fields in the county, but numerous in certain areas. The larvae have attacked every plant in parts of some fields, eating out the more

tender leaves and in some cases completely defoliating the plant. More damage is noticed near pigweed patches. The pupae of some dipterous parasite are commonly found near dead larvae of the armyworm. *Laphygma exigua* has been found on peppers for three years, but not in such destructive numbers before.

R. E. Campbell (July 1): Larvae are feeding mostly on weeds, particularly *Amaranthus*, but to a considerable extent on young peppers. In several fields damage is considerable, and growth will be checked, but there is not entire defoliation. Worms are migrating from weeds to peppers in several places. Observed on weeds and peppers in Los Angeles County, also 800 acres of pepper affected.

## SOUTHERN FIELD - CROP INSECTS

### COTTON

#### BOLL WEEVIL (*Anthonomus grandis* Boh.)

B. R. Coad (Cooperative Report June 16): Comparing weevil survival in cages this year and in 1926 it was noted that a greater survival was recorded this year at Florence, S. C., College Station, Tex., Aberdeen, N. C., Raymond, Miss., Rocky Mount, N. C., A. & M. College, Miss., Poplarville, Miss., and Holly Springs, Miss., while a greater survival was recorded in 1926 at Auburn, Ala., Baton Rouge, La., and Experiment, Ga.

North  
Carolina

R. W. Leiby (June 16): In the southern portion of the State examinations were made in 12 fields on June 6 and 14, of a total of 5065 plants and 43 weevils were found. This was an average of 1 weevil to 118 plants. The first weevil was found at Tarboro in the northern portion of the State June 8, which was 18 days earlier than in 1926. From June 15 to 30 in the Aberdeen section (Robeson and Scotland Counties) a total of 2,900 squares were examined in 9 different fields of which 294 were punctured. This was an average infestation of 10.1 per cent, the range being from 0 to 24 per cent. The plants averaged from 3 to 5 squares each. In the Rocky Mount section plants average about one square each. From May 26 to June 29 a total of 20,100 plants were examined and 4 weevils were found. This is an average of 1 weevil to 5,025 plants.

C. H. Brannon (July 20): The cotton boll weevil is generally more destructive than last year.

South  
Carolina

C. O. Eddy (July 2): No weevil activity has been noted in the section of Clemson College. A number of reports have been made but all seem doubtful except in the extreme eastern portion of the Piedmont Section.

E. W. Dunnam (July 5): From June 27 to July 2 records of weevil infestations were made on a large number of plantations in the vicinity of Florence. The average infestation was 15.78 per cent. The average infestation during the same week in 1926 was 1.5 per cent, and in 1925 it was 13.6 per cent.

C. O. Eddy (July 19): Boll weevil infestations small and scattered in the Piedmont section.

orgia

O. I. Snapp (July 1): Weevils are fairly abundant in Houston and in adjoining and near-by counties. There has already been some dusting with calcium arsenate in the Fort Valley section for weevil control. Some rain was reported on 17 days during June, and with a good source of weevil infestation cotton growers are anticipating considerable trouble from the insect this year.

(July 20): The boll weevil is more abundant than usual in Middle Georgia. Considerable damage is being done in some fields. The almost daily rains since the sixth of June have materially aided in the development of this insect in this region.

nessee

S. P. Dent (June 27): Reports indicate a rather widespread light infestation of weevils near Somerville.

bama

J. M. Robinson (June 30): The boll weevil is very active at Auburn. The first-generation adults are out feeding on and puncturing the squares. (July 5): A summary of reports from county agents and vocational agricultural teachers shows that there is a general and unusually heavy weevil infestation in the central and southern parts of the State. In southern Alabama cotton is well advanced for this season of the year, mature bolls being common. The first generation of weevils are emerging and some are now depositing eggs. Weather conditions and size of cotton are such as to assure almost 100 per cent emergence of this generation of weevils. On July 27 and 28 the average infestation was 11.9 per cent on dusted plats at Auburn compared to 20.4 per cent on the undusted plats.

issippi

Miss. State Plant Board (July 4): The heavy weevil injury reported by the State Plant Board a week ago has continued during the past week, according to observations made by inspectors of the Board on 99 farms in 23 counties. The general prevalence of weevils is shown by their presence on 82 out of 99 farms. Infestations running above 20 and 30 per cent were reported from several counties.

isiana

W. E. Hinds (June 14): The first weevil was found in the field near Baton Rouge on May 30 when a female was captured and feeding punctures made by her were noted but no egg punctures were found. Cotton has been blooming since June 1 on some of the cotton breeding plats particularly but no other weevil infestation evidence has been noted thereon.

B. R. Coad (July 4): On July 4 square examinations were made in



9 fields of cotton that were not overflowed. The punctured squares in these fields ranged from 1 to 11.8 per cent, the average being 7.1 per cent.

Texas

H. J. Reinhard (June 16): In the lower Rio Grande Valley the boll weevil is doing considerable injury in the irrigated section at La Feria. No complaints of injury have been received outside of this area.

F. L. Thomas (July 5): Ideal weather for the multiplication of weevils has prevailed for the past four weeks. Infestation is now very heavy in some sections, amounting to 50 per cent and in some fields in the wooded sections 100 per cent. It has been very unusual weather for Texas. (July 13): Boll-weevil infestations range from 0 in young cotton to 95 per cent on large plantations in the Brazos Bottom. An aeroplane company has three ships working in this area and plans to dust 11,000 acres. Boll worms are also just beginning to become abundant in many sections of central Texas. Fifteen counties in eastern Texas report boll-weevil injury. The crop in Williamson County, one of the largest cotton-growing counties of the State, seems to be very good with very little boll weevil injury.

F. C. Bishopp (July 26): Boll weevils are prevalent throughout northern Texas, and some report them to be sufficiently numerous to cause a large percentage of the squares to fall. Continued rains are promoting large stalk growth, and if these continue weevil injury may be rather heavy.

COTTON FLEA HOPPER (Psallus seriatus Reut.)

North  
Carolina

R. W. Leiby (June 14): Cotton flea hoppers are fairly abundant in the section from Red Spring to Laurinburg, with a number of blasted squares evident. (July 1): No cotton flea hoppers observed but some supposedly hopper damage has been seen at Rocky Mount.

South  
Carolina

C. O. Eddy (July 2): Cotton flea hoppers developed in large numbers on evening primrose and some of these migrated to cotton, causing only a very small amount of damage. Infestation of hoppers on both evening primrose and cotton is much less than before the long, cold, wet weather of the last of June. Infestation on croton is building up slowly. (July 19): The cotton flea hopper is developing in moderate numbers on croton. Very few are on cotton and injury is negligible.

E. W. Dunnam (July 5): We have received no complaints of hopper damage in this section (Florence) of the State this season.

Georgia

O. I. Snapp (July 1): We have very few complaints of the cotton hopper in middle Georgia this year.



nessoe S. P. Dent (June 27): Within the past week cotton hoppers have become general. Today 100 plants were examined in four fields and hoppers found to be plentiful. From 30 to 75 per cent of the forms have been destroyed by them.

bama J. M. Robinson (June 30): The cotton flea hopper is not appearing in large numbers in Alabama as yet. (July 5): Cotton flea hoppers have not shown up in southern and central Alabama in very large numbers, as only a few adults and nymphs have been found, either by sweeping or close observation.

ssissippi Miss. State Plant Board (July 4): Though cotton hoppers are now present in fields, only very slight injury has been reported this season, which is in marked contrast to the heavy damage occurring on the same date last year.

as F. L. Thomas (July 5): Complaints of cotton flea hopper damage have been received from only one section of the State and from there for only a short period. This was in the vicinity of Wharton County.

A Correction.

The note in the Insect Pest Survey, Vol. 7, No. 4, p. 121, referred to the entire number of flea hoppers collected from six different experimental plats located at College Station, Corpus Christi, San Antonio, Troup, Weslaco, and Wharton.

COTTON APHID (Aphis gossypii Glov.)

th R. W. Leiby (June 14): Lice are generally present on cotton about  
rolina the same as at this season in other years.

ssissippi R. W. Harned (July 25): Aphis gossypii was reported on cotton at Michigan City on June 20.

isiana W. E. Hinds (June 14): Cotton plant lice are abundant in spots but their parasites and predators are also abundant and should control the early-season infestation.

as H. J. Reinhard (June 16): The first and only complaint this season of louse injury to cotton was received June 15 from Needville in Fort Bend County.

COTTON LEAF WORM (Alabama argillacea Hüb. n.)

nessoe T. F. McGehee (June 15): One specimen of leaf worm was received from S. P. Dent, county agent at Somerville. Mr. Dent collected four specimens at Somerville on June 15.

as F. L. Thomas (July 5): Leaf worms are now abundant in some fields

in the vicinity of Corpus Christi. Cotton that has been stripped by leaf worms is common in the territory as far northward as San Marcos and eastward to Houston. A definite report was also received today of the presence of one moth and one caterpillar in Hill County.

#### THRIPS (*Thysanura*)

South  
Carolina

C. O. Eddy (July 2): Cotton seedlings were injured more severely by thrips than all other cotton insects throughout most of the Piedmont section. Three species were found on this injured cotton. Dwarfed seedlings having ragged and malformed leaves were common.

#### RED SPIDER (*Tetranychus telarius* L.)

South  
Carolina

J. O. Pepper (July 10): A few local infestations of the red spider on cotton have been located in the Coastal Plains region. The majority of infested spots are traced back to pokeweeds as their origin.

Mississippi

R. W. Harned (July 25): The first complaint of the year in regard to the red spider on cotton received on July 11 from Cleveland. This complaint was accompanied by specimens. Cotton plants infested with this species were received from Holly Springs on July 18 and on July 22 from Lula and Senatobia.

#### TOBACCO

##### TOBACCO FLEA BEETLE (*Epitrix parvula* Fab.)

Tennessee

A. C. Morgan (July 20): The tobacco flea beetles are more numerous and injurious than usual in the vicinity of Clarksville.

##### TOMATO SUCKFLY (*Dicyphus minimus* Uhler)

Florida

F. S. Chamberlin (July 19): Two fields of bright tobacco in Jackson County are very heavily infested with the tobacco suckfly. No other serious infestations have been observed.

##### TOMATO WORM (*Protoparce sexta* Johan.)

Tennessee

A. C. Morgan (July 20): Tobacco hornworms were more than usually abundant for the early season in the vicinity of Clarksville.

##### A WEBWORM (*Crambus* sp.)

Tennessee

A. C. Morgan (July 20): Sod webworms have been more than usually abundant on tobacco in the vicinity of Clarksville.

SUGARCANE

SUGARCANE BEETLE (Euethoeola rugiceps Lec.)

Mississippi

R. W. Harned (June 22): Complaints accompanied by specimens of the insect continue to be received at this office in regard to the rough-headed corn stalk beetle or sugarcane beetle. Corn and sugarcane are the crops that are being injured in most cases, although in one or two instances cotton stalks have been attacked. One man reported that 75 per cent of his sugarcane had been injured by these beetles.

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

T. E. Holloway and W. E. Haley (June 21): The third generation of the sugarcane moth borer seems to be well started in the vicinity of New Orleans and other points in southern Louisiana. Hatched and parasitised eggs, work of the first instar on the leaves, and larvae of the third instar in the stalks were found on this date on sugarcane. This is at least a month early for the third generation.

FOREST AND SHADE - TREE INSECTS

MISCELLANEOUS FEEDERS

PERIODICAL CICADA (Tibicina septendecim L.)

Virginia

W. J. Schoene (July 18): A fruit grower at Waynesboro informed me that the infestation of locusts in 1927 extended from the Valley to the top of the ridge on the west side of the mountain, whereas next year the locusts will appear on the east side of the mountain. They have been reported from the following counties: Augusta, Bedford, Botetourt, Roanoke, Rockbridge, Rockingham, Russell, Scott, Washington, Wise, and Allegheny.

T. M. Holland (July 6): It is locust year at Moneta.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

New York

E. P. Felt (July 25): Females of the white-marked tussock moth were laying eggs July 19. There has been a considerable infestation at Rochester (R. E. Hays). This insect has been observed in some sections in Buffalo though not nearly so abundantly as in former years (M. H. Clark, Jr.).

Ohio

E. W. Mendenhall (June 28): Sycamore and elm trees are badly infested with the white-marked tussock moth and the trees are being defoliated by them. (July 5): The white-marked tussock moth is eating the leaves and badly infesting the elm, linden,



and sycamore trees and has been found in abundance on wisteria vines in Springfield and vicinity.

Indiana

H. F. Dietz (June 28): The first outbreak of the tussock moth at Indianapolis was reported to us on June 10. Since that time it has been reported daily from various parts of Indianapolis. Out-of-State reports have been received from Franklin, Anderson, and Milroy.

J. J. Davis (July 19): The tussock moth caterpillar was first reported defoliating maple and other shade trees June 27. This caterpillar is abundant throughout the northern two-thirds of the State.

Illinois

C. C. Compton (July 17): The white-marked tussock moth is more abundant in northern Illinois than at any time during the past six years. Observations indicate that parasites will check the second brood.

Iowa

C. N. Ainslie (July 21): After a partial disappearance for several years this species is again multiplying and is likely to do severe injury by another season unless measures are employed for the destruction of the egg masses this fall.

Nebraska

H. H. Swenk (June 25-July 25): All over the eastern part of Nebraska the white-marked tussock moth has developed a supernatural abundance during the period covered by this report, and in some localities the caterpillars have seriously injured the foliage of the trees.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Ohio

T. H. Parks (July 25): There have been more complaints than usual of bagworm injury to fruit and shade-tree plantings. Complaints come from southern and central counties. In one case the insect had defoliated apple trees. Arborvitae was also attacked.

E. W. Mendenhall (July 9): The bagworm is beginning to put in its appearance in southwestern Ohio. I find it worse on evergreens and shade trees in towns and cities. (July 25): Norway maples and boxelder trees are being riddled by the bagworm in different parts of Columbus.

Indiana

J. J. Davis (July 19): The bagworm was reported damaging cedar at Cynthiana July 2, soft maple at Princeton July 12, and soft maple at Evansville, July 18.

H. F. Dietz (July 21): The bagworm moth has been an unusually severe shade-tree pest in Indianapolis, Evansville, Washington, and Vincennes. It has also been found more abundant in nurseries this year than previously.



Alabama J. M. Robinson (June 30): The bagworms are very active on cedar and arborvitae at Auburn.

Missouri J. W. McColloch (July 20): Reports of bagworm injury are just beginning to come in. On July 19 damage was reported to cedars at Manhattan and Irving.

Mississippi R. W. Harned (July 25): Specimens of the common bagworm on arborvitae were received recently from Macon.

GYPSY MOTH (Porthetria dispar L.)

Maine C. R. Fhipps (July 21): The gypsy moth has been on the increase during the past few years. It produced severe defoliation in several localities in Cumberland County (July 7).

TWIG GIRDLER (Oncideres cingulata Say)

Virginia F. E. Brooks (June 27): At Petersburg, where twig girdlers have been prevalent and destructive to hickory and persimmon for the past ten years, relatively few twigs were girdled last fall. The prolonged outbreak of this pest in parts of Virginia and the Carolinas appeared to be declining.

BLACK CARPENTER ANT (Camponotus herculeanus pennsylvanicus DeG.)

Ohio E. W. Mendenhall (July 4): Some of the old shade trees of historical character of Worthington are infested with the black carpenter ants, which are doing more or less damage.

A CERAMBYCID BEETLE (Pseudibidion unicolor Rand.)

Virginia F. E. Brooks (June 7): Numerous young hickory and pecan trees were found entirely severed by larvae of the above beetle. The insects were pupating and soon thereafter emerged as beetles.

RED SPIDER (Tetranychus telarius L.)

New York E. P. Felt (July 25): Red spider has developed in considerable numbers at Rochester on junipers and spruces owing to the recent heat wave (R. E. Horsey).

ARBORVITAE

A SOFT SCALE (Lecanium fletcheri Ckll.)

Ohio E. W. Mendenhall (July 21): The arborvitae in nurseries and private plantings are quite badly infested with the Lecanium fletcheri Ckll. scale.

RED SPIDER (Tetranychus telarius L.)

- Ohio E. W. Mendenhall (July 9): The red spider has begun its work on arborvitae in the nurseries in Springfield, and the work of treatment is being carried on by using sulphur.
- Mississippi R. W. Harned (July 25): Specimens were received from Crystal Springs on July 7 on arborvitae.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

- Kansas J. W. McColloch (July 20): Boxelder bugs were reported abundant on boxelder around Wellington on July 12 and at Council Grove on July 19.

A LEAF ROLLER (Gracilaria negundella Cham.)

- Iowa C. N. Ainslie (July 21): This leaf roller is present in large numbers on many boxelder shade trees in the vicinity of Sioux City this summer, doing little real injury, but spoiling the appearance of the trees. Several species of parasites are busy just now and promise a reduction in the number of the pest.

CHESTNUT

A WEEVIL (Curculio auriger Cas.)

- Maryland F. E. Brooks (June 6): Beetles of the lesser chestnut curculio were found on the still unopened buds of the male catkins of chestnut at Bell Station. Beetles were not abundant; however, it is probable that emergence from the ground was still under way.

CREPE MYRTLE

AN APHID (Myzocallis sp.)

- Mississippi R. W. Harned (July 25): Myzocallis sp. was reported on crepe myrtle at Meridian on July 18.

ELM

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

- New York E. P. Felt (July 25): Gossyparia spuria were hatching at Highland Park, Rochester, from July 5 to 16. The insect was rather abundant (R. E. Horsey).
- Ohio E. W. Mendenhall (July 21): I find some of the elms in Clark Court infested with the European elm scale. These are found on several varieties of elm.

ELM LEAF BEETLE (Galerucella luteola Müll.)

E. P. Felt (July 25): Grubs of the elm leaf beetle were hatching at Rochester June 23, but as there was no serious infestation, it was not necessary to spray especially for this insect (R. E. Horse Elms at Ballston Spa are showing some injury by this pest, although in most sections of the Hudson Valley there appears to be relative little damage.

E. W. Mendenhall (July 19): The elm leaf beetle has put in its appearance in New Castle. They have nearly all entered the ground to pupate and will emerge as adults in a short time.

ELM CASE BEARER (Coleophora limosipennella Dup.)

E. P. Felt (July 25): The elm leaf miner has been injurious to English and Scotch elms at New Rochelle and Scarsdale (G. H. Coddington).

ELM SCURFY SCALE (Chionaspis americana Johns.)

H. F. Dietz (June 23): The scurfy scale of the elm has been frequently reported on American elm from Indianapolis, Greenfield, and scattered towns over the State.

LARCH

LARCH CASE BEARER (Coleophora laricella Hübn.)

E. P. Felt (July 25): The American, European, and Japanese larches in Highland Park, Rochester, show damage by the larch case bearer. It was noticed in some numbers at Saratoga.

LOCUST

LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

R. W. Harned (July 25): The locust leaf miner has been abundant in southwest Mississippi during the past two months on locust trees. Specimens have been received from Natchez and Vicksburg while reports in regard to this insect have been received from several localities.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

E. W. Mendenhall (July 15): I find the honey locust attacked by the V-marked leaf roller in Clark County in several places.

MAPLE

NORWAY MAPLE APHID (Periphyllus lyropictus Kess.)

New York

E. P. Felt (July 25): The Norway maple aphid has been abundant and injurious to Norway maples at Buffalo (M. H. Clark, Jr.) and also at Rochester (R. E. Horsey). They are also found in the vicinity of Albany and in the southern Hudson Valley.

Maryland

P. D. Sanders (July 1): Specimens of the Norway maple aphid and inquiries about its control have been received from all parts of the State during the past month. Parasites and predators are now clearing up the infestation. The injury has resulted in leaf dropping which is still continuing in spite of the infestation decreasing. Many towns in all sections of Maryland have their streets lined with maples which have been heavily infested this year with the aphids. Automobiles parked for a few minutes under a maple become splotted with honeydew. The aphid was reported from Frederick, Snow Hill, Berlin, Salisbury, Chestertown, Baltimore, Laurel, and elsewhere.

Indiana

H. F. Dietz (June 28): The most conspicuous of plant lice is the Norway maple plant louse which unquestionably is widespread throughout the State wherever Norway maples occur, and has been definitely recorded from the following locations, causing the leaves to fall and the sidewalks to be covered with honeydew: Indianapolis, Greenwood, Centerville, Martinsville, Richmond, Greenfield, Rennville, Bluffton, Anderson, Marion, LaFayette, Goodland, Remington, Elkhart, Rochester, Columbus, and Frankli

J. J. Davis (July 19): Reports of the Norway maple aphid increased materially the last few days in June and early July, being especially conspicuous because of the honeydew on the upper leaf surfaces. Reports since last month's report came from Laketon, Anderson, Nappanee, Summitville, Elkhart, Alexandria, Modoc, South Bend, and Winchester. The writer drove through from La Fayette to Monroe, Mich., the last of June and in every town the presence of these aphids on hard and Norway maples was everywhere evident by the honeydew. Likewise, there were almost as great infestations of other species on soft maple, boxelder, elm, and linden.

Ohio

E. W. Mendenhall (June 30): The Norway maples in the vicinity of Columbus, also in southern Ohio, are covered with a sweet molasses-like substance which they excrete and the insects are causing the foliage to fall.

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

Indiana

J. J. Davis (July 19): The flat headed borer was reported as seriously damaging young maple trees at Huntington and Huron June 24 and July 13, respectively.



COTTONY MAPLE SCALE (Fulvinaria innumerabilis Rathv.)

diana

J.J.Davis (July 19): The cottony maple scale continues to be received frequently in the mail. Counties represented the past month include Boone, Decatur, Delaware, Elkhart, Hamilton, Jasper, Jay, Madison, Marion, Miami, Randolph, Shelby, Tipton, and Grant.

E. F. Dietz (June 28): The cottony maple scale is bad in Indianapolis, Elwood, Anderson, Noblesville, Remington, and Elkhart. Likewise infestations have been observed at Bluffton and Pennyville.

RED SPIDER (Tetranychus telarius L.)

ssissippi

R. W. Harned (July 25): Specimens of the red spider were received from Holly Spring with the report that they were attacking maple on July 9.

OAK

A LEAF MINER (Lithocolletis conglomeratella Zell.)

to

E. W. Mendenhall (July 15): The leaf miner Lithocolletis conglomeratella is noticeable on white oak in the southwestern portion of Ohio.

PINE

TIP MOTH (Rhyacionia bushnelli Busck)

isiana

Monthly Letter of Bureau of Entomology, No. 157, May, 1927: On May 12 L. G. Baughofer, stationed at Halsey, Nebr., arrived in Asheville, N.C., to study the tip-moth situation about there, with a view to obtaining new parasites to introduce in the plantations at Halsey. Later, accompanied by Mr. St. George, he left Asheville for Bogalusa, La., where the tip moth has been causing severe losses for the past few years to the reproduction of young pine. Loblolly pines were found to be the favorite host, while slash pine was but slightly injured. Observations seemed to indicate that longleaf pine was almost immune from this type of injury, its principal injury seeming to be a loss in the attainment of height. Observations were also made on a series of trap-tree studies that have been in progress for the last two years, to determine the aggressiveness of certain barkbeetles and the condition most favorable for their attack and the development of their broods. On May 20 Messrs. Baughofer and St. George conferred with R. D. Forbes, Director of the Southern Forest Experiment Station, New Orleans, La., on current insect problems in the South. It was learned that tip-moth injury has been noted in plantations all over the northern part of Louisiana, especially for the past two or three years, indicating that this injury is quite general in the State.

INTRODUCED PINE SAWFLY (Diprion simile Hartig)

New York

E. P. Felt (July 25): The European pine sawfly occurred here and there in the pinetum of Rochester public parks early in the month (R. E. Horsey).

PINE BARK LOUSE (Chermes pinicorticis Fitch )

New York

E. P. Felt (July 25): Chermes pinicorticis has been quite abundant at Rochester on pine and fir (R. E. Horsey).

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Ohio

E. W. Mendenhall (July 15): I find that several of the pines, especially the white pines, are somewhat infested with the pine leaf scale, in the vicinity of Springfield.

POPLAR

POPLAR TENT MAKER (Melalopha inclusa Hubn.)

Indiana

H. F. Dietz (July 21): The poplar tent maker was very abundant on Carolina, Lombardy, and Volga poplars at Terre Haute.

POPLAR BORER (Saperda calcarata Say)

Nebraska

M. H. Swenk (June 25-July 25): About the normal number of complaints of injury to poplar trees by the poplar borer have been received during the period covered by this report.

COTTON-WOOD BORER (Plectrodera scalator Fab.)

Texas

F. C. Bishopp (July 26): These borers have been causing considerable injury to poplars, especially Lombardy, in Dallas. Many young trees have been killed, and older ones show dead leaves and branches.

SATIN MOTH (Stilpnotia salicis L.)

Maine

C. R. Fhipps (July 21): Many poplars near Biddeford and Portland are defoliated by the satin moth (July 1).

SPRUCE

SPRUCE SAWFLY (Neodiprion abietis Harr.)

Massachusetts

A. I. Bourne (July 25): Reporting on the conditions from the last of June to date, I would say that the fir sawfly was reported in this State from a number of different sections, indicating that this year's outbreak was quite general throughout the State. Wherever this pest was collected or reported, it was present in

very large numbers and doing a considerable amount of stripping, both of old trees and seedlings. By the 25th of June the larvae had for the most part completed feeding and begun to spin their cocoons.

SPRUCE BUDWORM (Harmoloba fumiferana Clem.)

Michigan E. I. McDaniel (July 18): The spruce budmoth has been very plentiful in Michigan this year, and has done serious injury on the eastern border of the State.

SPRUCE LEAF MINER (Recurvaria piceaella Kearf.)

io E. W. Mendenhall (June 27): The needle miner Recurvaria piceaella is quite bad on spruce at Mt. Vernon.

A RED SPIDER (Paratetranychus uniunguis Jac.)

Connecticut M. P. Zappe (July 23): Paratetranychus uniunguis is causing considerable injury to spruces in nurseries, turning the leaves red-rusty color over the entire State.

WHITE GRUBS (Phyllophaga spp.)

io E. W. Mendenhall (July 16): The Koster blue spruce in a nursery at Springfield is being damaged and killed by the white grubs.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

diana B. A. Porter (July 23): The walnut caterpillar is quite common on black walnut and pecan, occasional trees being defoliated.

ennessee A. C. Morgan (July 20): The walnut datanid has completely defoliated a majority of the walnut trees in the vicinity of Clarksville.

ssissippi R. W. Harned (July 25): The walnut caterpillar is causing considerable damage throughout the State to walnut, pecan, and hickory trees. At Ocean Springs, J. P. Kislanko found that most of the egg masses were parasitised. In a batch of 1,122 eggs all but 3 were parasitised. In another cluster of 1,191 eggs 1,034 were parasitised. In some cases 100 per cent of the eggs were parasitised.

BLACK WALNUT CURCULIO (Conotrachelus retentus Say)

st Virginia F. E. Brooks (June 27): Conotrachelus retentus are abundant and are attacking practically all of the light crop of nuts. Not all the punctured nuts fall, but a heavy drop of the scanty crop is anticipated.



WILLOW

MOTTLED WILLOW BORER (Cryptorhynchus lapathi L.)

Indiana

H. F. Dietz (June 28): The poplar and willow borer is bad in the vicinity of Indianapolis on Lombardy poplar and on pussy and weeping willows.

J. J. Davis (July 19): The mottled willow borer was reported damaging willow at Marion June 27.

POPLAR TENT MAKER (Melalopha inclusa Hübner.)

Ohio

E. W. Mendenhall (July 22): I find the poplar leaf tyer feeding on willows at Springfield. These leafy retreats are quite interesting.

GREENHOUSE AND ORNAMENTAL PLANTS

MISCELLANEOUS FEEDERS

APHIDIIDAE

Tennessee

A. C. Morgan (July 20): Plant lice were very numerous on ornamentals throughout the rainy period of spring and early summer in the vicinity of Clarksville.

WHITE FLIES (Aleyrodidae)

Georgia

O. I. Snapp (July 20): The white flies are very abundant this year on plants in the yards of this city (Fort Valley). Considerable damage has been done on some properties.

FLOWER WEBWORM (Homoeosoma electellum Hbst.)

Iowa

C. J. Drake (July 12): The flower webworm, Homoeosoma electellum Hbst., has been injuring a number of composite flowers at Ames this summer.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Indiana

H. F. Dietz (June 28): The oyster-shell scale has been very abundant on ornamental shrubbery throughout the State. At Indianapolis the hatching of the light-brown form took place about May 15. No definite records on the hatching of the other form were obtained in this locality. At Pennville, hatching of the single-brooded gray-brown form took place about June 1 to 5. In the locality of Pennville two new host records for Indiana are obtained. These were both on native shrubs, namely, bladdernut, Staphylea trifolia and wafer ash, Ptelea trifoliata. Three miles southeast of Bluffton this scale was found very abundant on young



ash and on young prickly ash, Zanthoxylum americanum. This also is a new Indiana host record. About 7 miles east of Indianapolis there is a new large real estate addition, the street trees of which are all soft maple. At least 50 per cent of these soft maple trees are infested with the oyster-shell scale and at least 5 per cent are dead or dying because of this pest.

A MEALYBUG (Phenacoccus colemani Ehrh.?)

Mississippi

R. W. Harned (July 25): The species of mealybug most frequently collected in greenhouses or on house or yard plants during the past year is Phenacoccus colemani Ehrh. ?. Within the past month this species has been received from: Belzone, on an unknown succulent plant; Holly Springs, on verbena; Pascagoula, on althaea; Yazoo City, on begonia; Cleveland, on cherry, coleus, geranium, ivy, and jasmine.

RED SPIDER (Tetranychus telarius L.)

Indiana

H. F. Dietz (July 21): The red spider has been unusually abundant on evergreens throughout the State.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea F. Loew)

Indiana

H. F. Dietz (July 21): An outbreak of the chrysanthemum gall midge was found on chrysanthemum at Washington in a greenhouse.

DAHLIA

MARGINED BLISTER BEETLE (Epicauta cinerea marginata Fab.)

Indiana

J. J. Davis (July 19): Margined blister beetles were reported damaging dahlia in commercial plantings at Tell City July 15.

A FULGORID (Acanalonia conica Say)

Mississippi

R. W. Harned (July 25): Serious damage to dahlia plants was reported from Clarksdale on June 30 by Fulgoridae identified as Acanalonia conica by J. M. Langston.

A BEETLE (Luperodes sp.)

Mississippi

R. W. Harned (July 25): Specimens identified as a species of Luperodes were reported from Coila on June 28. Severe damage to dahlia plants was reported.

GLADIOLUS

TARNISHED PLANT BUG (Lygus pratensis L.)

Indiana

J. J. Davis (July 19): The tarnished plant bug was reported as causing considerable damage to gladiolus by a commercial grower at Spencer July 16. The grower reports, "They sap the life from gladioli spikes just as the spikes appear above the foliage.

They work on spikes from then on to blooming stage if spikes can hold out that long which is impossible in most cases. Have seen 100 or more on a spike."

BULB MITE (Rhizoglyphus sp.?)

Indiana

H. F. Dietz (July 21): Bulb mites, Rhizoglyphus sp.?, were found doing severe injury to gladiolus bulbs at Mathews. A planting of several thousand bulbs of the variety "Pride of Goshen" was found to be severely attacked, the mother bulbs being reduced to a mass of dust by the mites. The previous history of these gladioli was that they had been stored in crates, which had previously been used for the storing of tulips. This is the first authentic report of bulb-mite injury to gladioli in Indiana.

HOLLYHOCK

STALK BORER (Papaipema nebris nitela Guen.)

Ohio

E. W. Mendenhall (July 12): There has been considerable damage to hollyhock plants in Columbus and vicinity this season by the common stalk borer.

IRIS

IRIS BORER (Macronoctua onusta Grote)

Indiana

H. F. Dietz (June 28): The iris borer has been very bad in several cities and towns throughout the State. This insect seems to be more serious in city and town gardens than in plantings in the open country. It seems to be decidedly local. The localities where this insect is most abundant are Indianapolis, Bluffton, LaFayette, and Greenwood. The eggs of this insect started hatching the 15th of April, but because of intervening cold weather hatching continued until the middle of May.

IVY

OLEANDER SCALE (Aspidiotus hederæ Vall.)

Ohio

E. W. Mendenhall (July 23): I found English ivy in some of the greenhouses of Springfield badly infested with the oleander scale.

NASTURTIIUM

BEAN APHID (Aphis rumicis L.)

Indiana

J. J. Davis (July 19): The black nasturtium aphid was reported on nasturtium from Universal July 2.

PALM

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

New York

E. P. Felt (July 25): The Fuller's rose beetle has become established in a Dobbs Ferry greenhouse, being especially injurious to palms.

PEONY

STALK BORER (Papaipema nebris nitela Guen.)

Ohio

E. W. Mendenhall (June 25): Some damage to peony plants by the stalk borer was reported from Columbus and vicinity.

PHLOX

RED SPIDER (Tetranychus telarius L.)

Indiana

J. J. Davis (July 19): The red spider was reported damaging phlox and other garden flowers in central Indiana about the middle of July.

Mississippi

R. W. Harned (July 25): Red spiders were sent in from Corinth July 12 where they were reported as causing serious damage to phlox.

RHODODENDRON

RHODODENDRON LACEBUG (Stephanitis rhododendri Horv.)

New York

E. P. Felt (July 25): The rhododendron lacebug was less abundant than usual owing to systematic annual sprayings, although Kalmia latifolia not sprayed last year was badly infested the present season (R. E. Horsey). Mr. Wm. L. Edson stated that there are several patches of native Rhododendron maximum near Angelica infested with this insect.

ROSE

ROSE CURCULIO (Rhynchites bicolor Fab.)

West

Virginia

F. E. Brooks (June 27): At French Creek serious injury to buds and hips of rugosa roses is occurring. The beetles are feeding on the buds of the roses and ovipositing in the hips.

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

New York

E. P. Felt (July 25): Specimens of the ovate snout beetle, Otiorhynchus ovatus, overran a house in a sandy area near Albany, evidently having bred in considerable numbers in near-by rose bushes.

STRAWBERRY LEAF ROLLER (Ancyliis comptana Fröhl.)

Connecticut

W. E. Britton (July 19): The larvae of Ancyliis comptana injured a large proportion of buds in some gardens at New Haven.

ROSE CHAFER (Macroductylus subspinosus Fab.)

Massachusetts

A. I. Bourne (July 25): The first adults of the rose chafer made their appearance June 20-21. Up to date these have not been anywhere nearly so abundant as usual, nor have any complaints come in of their being abundant in other sections of the State.

BRISTLY ROSE SLUG (Cladius isomerus Nort.)

Indiana

H. F. Dietz (June 28): The rose slug Cladius isomerus Nort. has been very common and has done considerable damage to various garden roses, especially in Indianapolis.

SNAPDRAGON AND LARKSPUR

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Indiana

H. F. Dietz (July 21): The cyclamen mite was found on larkspur and snapdragon in a greenhouse at Washington, and was also found on hardy delphiniums out of doors at Indianapolis. This is the first damage by this pest out of doors that has been noted. The flower buds were characteristically malformed and the foliage of infested plants was very thick and brittle.

SPIRAEA

SPIRAEA APHID (Aphis spiraeicola Patch)

Indiana

H. F. Dietz (June 28): The spiraea aphid occurs in immense numbers on young tips of spiraea and several nurseries have reported that the growth of these plants has been checked because of the exceedingly large number of lice occurring on them. In one of our Indianapolis parks the Spiraea van Houttei is black because of sooty mold growing on the honeydew.

TAXUS

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

New York

E. P. Felt (July 25): Otiorhynchus sulcatus has caused consider-



able damage to Taxus plants at Westbury, L. I., from one to ten weevils being easily found upon individual plants.

VERBENA

MARGUERITE FLY (Phytomyza chrysanthemi Kowarz)

Mississippi R. W. Harned (July 25): Verbena leaves damaged by the marguerite fly were received on June 24 from Philadelphia.

VIBURNUM

SNOWBALL APHID (Anuraphis viburnicola Gill.)

Indiana H. F. Dietz (June 28): The snowball aphid has caused serious malformation of the growth of the common snowball or viburnum in Indianapolis, Richmond, and Bridgeport.

ZINNIA

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli Guen.)

Mississippi R. W. Harned (July 25): Specimens of Prodenia ornithogalli have just been received from Yazoo City. Inspector Chesley Hines reports that the plants are covered with the worms and that they are eating the leaves and buds. He sent in 16 specimens.

I N S E C T S   A T T A C K I N G   M A N   A N D

D O M E S T I C   A N I M A L S

MAN

FLEAS (Siphonaptera)

Indiana J. J. Davis (July 19): Fleas in houses reported abundant at La Fayette, July 12.

Missouri L. Haseman (June 28): During the month a few farmers have reported heavy epidemics of fleas in their homes and about the farm buildings.

Indiana H. F. Dietz (June 28): Three infestations of fleas (Ctenocephalus canis Curtis and C. felis Bouche) have been reported in the last week (May 20 to 25) from Indianapolis. Two were from dwellings and one from lawns. (July 21): Reports of infestations of cat and dog fleas have been received from Indianapolis, Gary, Richmond, Troy, and Tell City.

Nebraska M. H. Swenk (June 25-July 25): During the month of July a very

great number of complaints of infestations of houses by fleas, Ctenocephalus canis and C. felis, were received from Lincoln and vicinity.

BOOKLOUSE (Troctes divinatorius Müll.)

Maryland A. N. Caudell (July 14): A lady of Landover has for some six weeks been troubled by the presence in her hair of the common house booklouse. It is stated that numbers have been combed from her hair and specimens of the insects were submitted to me for determination. This is, so far as I know, the first record of these insects infesting the heads of persons.

A TICK (Dermacentor andersoni Stiles)

Arkansas H. H. Schwardt (July 1): Several cases of tularaemia caused by tick bites have been reported in Benton County during June and July. The mortality has been greater than is usually the case with tularaemia. Rabbits are not being hunted as before and as a result are increasing rapidly.

A SPIDER (Latrodectes mactans Fab.)

Arkansas H. H. Schwardt (July 1): Two specimens have recently been found in an orchard under debris, and a third in a corner of the insectary at the Bentonville station. The last was in a large tubular web which also contained an egg sack. Approximately 500 young hatched from the egg sack. This spider is reported by Baerg as being one of the most poisonous in the United States.

MOSQUITOES (Culicidae)

Louisiana W. V. King (July 23): An increase of the species Culex leprincei has been coincident with the increase of Anopheles during the overflow in northeastern Louisiana. It is not troublesome in houses as a rule, but has been very annoying out of doors at night and in shaded places during the day.

W. V. King (July 23): Species of mosquitoes such as Aedes vexans Meig. and Psorophora sayi D. & K. which were numerous before the overflow have not been at all in evidence since then.

MALARIA MOSQUITO (Anopheles quadrimaculatus Say)

Louisiana W. V. King (July 23): A marked increase of this species occurred during May and June in the area overflowed by the Mississippi River in northeastern Louisiana, becoming a serious pest problem to people living in unscreened or poorly screened houses and among the flood refugees in temporary camps. There has not as yet been a corresponding increase in the amount of malaria, but with the return of the refugees to their homes and with a continuance of

Anopheles abundance this is to be expected before the end of the season. Comparative counts of resting mosquitoes were begun July 8 and the average number per house found underneath a group of five tenant houses for three successive weeks was as follows: July 8 - 1,100; July 15 - 991; July 22 - 929. The average for two of these houses for which comparative records for previous years are available were 977, 873, and 735 for the same dates while in July, 1923, the average was 145, and in July, 1924, only 22. Although the records for this year are above normal they were nevertheless equalled several years ago as a result of excessive rainfall during the spring and summer. However, from general observations made at Tallulah and elsewhere it was evident that the increase of Anopheles has been greater in other places than at Mound. While the female Anopheles under normal conditions usually do their biting after dark they have caused considerable annoyance during this overflow by biting during the daytime in buildings or in shady places out of doors. The removal of most of the domestic animals and the consequent lack of food for so many mosquitoes is a probable explanation for this change of habits. A report from Bear Lake, where mosquitoes were said to be extremely numerous, stated that Anopheles were biting out of doors in bright sunlight, which is a decidedly unusual occurrence.

#### CATTLE

##### SCREW WORM (Cochliomyia macellaria Fab.)

F. C. Bishopp (July 26): The screw worm has been extremely abundant and injurious so far this year. The losses have been heaviest in the southwestern part of the State, on the southern end of the Edwards Plateau and southward. Many stockmen state that this is the worst screw-worm year they have experienced. The death losses are stated to range among sheep and goats from 1 to 5 per cent. The death losses, naturally, have been heaviest among young stock. At this date the flies are becoming less abundant, and apparently the number of new cases is decreasing rapidly.

##### HORN FLY (Haematobia irritans L.)

D. C. Parman (July 26): The horn fly has increased during the last two weeks from 0 to 250 per animal to 100 to 2,500 per animal.

##### STABLE FLY (Stomoxys calcitrans L.)

F. C. Bishopp (July 26): The stable fly is increasing to some extent in northern Texas, but has not become sufficiently abundant as yet to cause heavy losses. Recent heavy rains since threshing has begun are probably the forerunner of much more serious annoyance from these insects.



POULTRY

ROSE CHAFER (Macrodactylus subspinosus Fab.)

Nebraska

M. H. Swenk (June 25-July 25): During the last week in June the rose chafer, as usual, appeared in abundance in the sandhill region of westcentral Nebraska. From Custer County, along the eastern edge of the heavily infested district, it was reported that hundreds of young chickens, turkeys, ducks, and geese were killed this year by eating these beetles. Two Custer County 4-H club boys reported that one of a flock of turkeys, weighing about one pound each, over half were lost within a few days from eating these beetles. The usual damage to trees and shrubs by the rose chafer has also been reported.

I N S E C T S I N F E S T I N G H O U S E S

A N D P R E M I S E S

TERMITES

Missouri

L. Haseman (June 28): Inquiries continue to come in from different parts of the State relative to termites in houses and other buildings. There seems to have been an unusual epidemic throughout the State this spring.

Kansas

J. W. McColloch (July 20): Hoisington, Beloit, and Kansas City have reported damage to houses. The first floor of a school house at Salina has had to be replaced. At Wellington the termites are working in a lumber yard. They have gone through stacks of new lumber, have damaged the office, and destroyed books and records.

Nebraska

M. H. Swenk (June 25-July 25): Late in June additional reports of injury by our common termite, Reticulitermes tibialis Banks were received from Franklin County.

ANTS (Formicidae)

South  
Carolina

J. O. Pepper (July 19): A large number of requests for exterminating ants from dwellings have been received during the past two months. Reports coming from various sections of the State.

Mississippi

R. W. Horned (July 25): Late males and females of Cremastocaster laeviuscula var. clara Emery were found emerging from a nest in a house at A. & M. College on June 25.



ARGENTINE ANT (Iridomyrmex humilis Mayr )

Mississippi

R. W. Harned (July 25): The Argentine ant has recently been found at Osborn and Moss Point.

PHARAOH'S ANT (Monomorium pharaonis L.)

Mississippi

R. W. Harned (July 25): A number of property owners in West Point are having trouble with both Pharaoh's ant and the tiny thief ant.

PENNSYLVANIA WOOD-ROACH (Parcoblatta pennsylvanica DeG.)

Nebraska

M. H. Swenk (June 25-July 25): A report of the infestation of a residence in southeastern Lancaster County with our native wood-roach, Parcoblatta pennsylvanica, was received during middle July.

CARPENTER BEE (Xylocopa virginica Drury)

Kansas

J. W. McColloch (July 20): The following reports have been received during the month: June 20, bees working in rafters of garage at Florence; June 22, injury in building at Emporia; June 23, garage damaged at Manhattan; July 6, house infested at Wilsey; July 7, damage to porch at Alma.

POWDER-POST BEETLE (Lyctus cavicollis Lec.)

California

Monthly News Letter, Los Angeles County Hort. Comm. (June 18): Several reports have recently been received by the Los Angeles County Horticultural Commissioner's office from widely separated points in the county asking for information concerning a beetle destroying furniture and woodwork. In one case the veneer covering of a dresser was found badly riddled by the borers. In another the woodwork of an outlying post office was being seriously damaged. In a third case the slide runner of an extension table was being damaged, and in still another the veneer paneling of one entire side of a dining room had been ruined. An investigation showed the work in each case to be that of one of the powder-post beetles, Lyctus cavicollis, a small slender brownish beetle, which mines the seasoned wood of oak, hickory, eucalyptus, etc., and is recorded as common to California and Oregon.

S T O R E D - G R A I N I N S E C T S

Nebraska

M. H. Swenk (June 25-July 25): Stored-grain pests are not being complained of. One Thomas County correspondent submitted a sample of 1925 rye heavily infested with a mixture of Tenebroides mauritanicus L., Cryptolestes pusillus Schön., Sitophilus granarius L., and Tribolium confusum Duv.

A MITE (Tyroglyphus sp. ?)

Indiana

H. F. Dietz (July 21): A heavy infestation of flour mites, Tyroglyphus sp. ?, was found in a very large grain elevator at Beech Grove, in the dust from the carrying belts.

LESSER GRAIN BORER (Rhizopertha dominica Fab.)

Virginia

S. W. Bromley (July 22): An adult of the lesser grain borer, was found in a mill at Richmond July 9. Subsequent inquiries revealed the fact that shipments of western grain had just been received at the mill. It is probable that the beetle came in with this shipment.

# THE INSECT PEST SURVEY BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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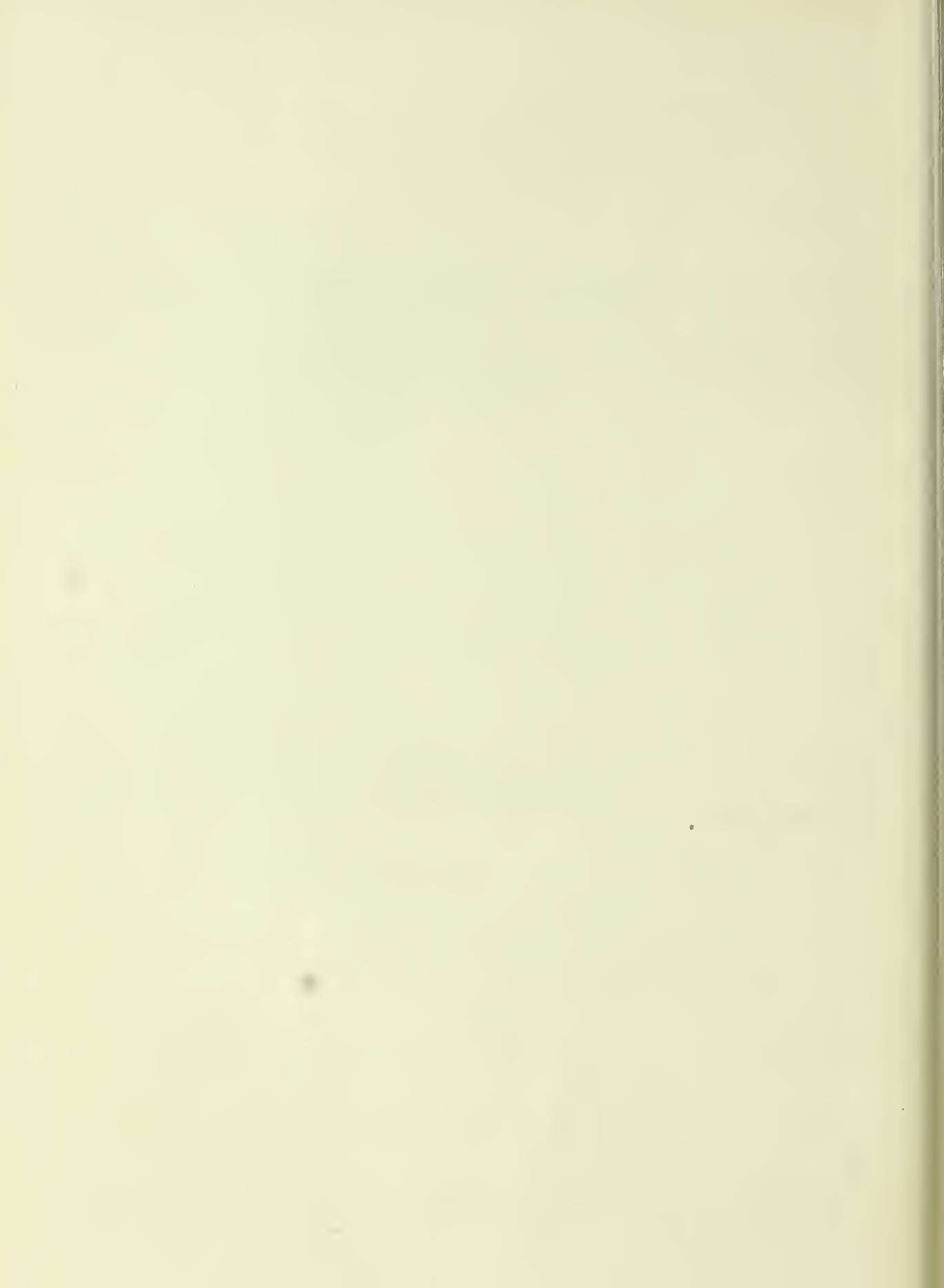
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BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR AUGUST, 1927

The European corn borer has been found in eleven new counties in Ohio, extending from Mercer County on the west-central border of the State to Madison County in the south-central part of the State; in three new counties (Kosciusko, Wells, and Adams) in Indiana; in two new counties in Michigan; in eight new counties in Pennsylvania, extending to the southern border of the State, and in the eastern part of the State to Northumberland and Wyoming Counties; and in one new county in New York State.

White grubs have been exceedingly destructive this season in the East-Central States extending from northern Indiana and Illinois westward to Nebraska.

The fall armyworm has been generally prevalent in the Southeast and lower Mississippi Valley, damage being exceedingly bad in the Delta region.

Present indications are that the Hessian fly will be quite serious in early planted wheat in Illinois, as the fly is well distributed and moderately abundant. The late summer survey in Maryland indicates that the fly is much more prevalent in the western part of the State than on the Eastern Shore. The State average on the whole, is high, being 21 per cent.

Throughout the entire corn belt to the lower Mississippi Valley, the corn ear worm is doing the usual amount of damage to both corn and tomatoes.

The chinch-bug situation, on the whole, is rather favorable, no serious damage having been reported from any part of the chinch-bug belt.

In the West-Central States the armyworm is present in outbreak numbers. Reports of heavy damage have been received from South Dakota and Iowa.

The spotted cucumber beetle is unusually destructive to corn in the southern part of the East-Central States from southern Indiana westward to Iowa, and southward to Missouri, the damage being particularly prevalent in the overflow areas along the Missouri and Mississippi Rivers. In areas north of this region the corn root worm is attacking the corn and immediately west of this area in western Nebraska Diabrotica virgifera is attacking corn seriously for the first time in that State.

The alfalfa weevil has been more destructive in eastern Idaho than any year since 1921.

The Japanese beetle has been found this summer as far west as Wilkes-Barre and Gettysburg, Pa., and as far south as Washington, D. C., and Cambridge, Md., and as far northeast as Bridgeport, Connecticut.

In the New England States and New York the apple maggot emerged later than usual, and considerable damage to fruit is being reported from this region.

Present indications are that there will be a heavy infestation by lat codling moth larvae in Indiana, Georgia, and Idaho.

In the fruit-growing sections of New England and New York the pear psylla is again prevalent, while pears are being seriously damaged by the pear thrips in parts of California.

The oriental fruit moth is becoming increasingly abundant. Connecticut reports a general increase while Georgia records the heaviest infestation ever observed in the State. Other reports on this insect have been received from New York, Delaware, Maryland, and Ohio.

A very serious infestation of raspberries by the raspberry fruit worm has developed in the important raspberry and loganberry canning districts of Washington. This infestation has become so intense that the fruit canners are rejecting the fruit and many growers have stopped picking.

No further Mexican fruit worm infestations have been reported from Texas.

The citrus thrips has scarred as high as 80 per cent of the crop in parts of the California citrus belt.

The unusually heavy infestations of the stalk borer reported in the last number of the Bulletin continued throughout August.

The usual number of reports on damage by blister beetles to truck crop is being received. An interesting note along this line was sent in from California where Tegrodera latecincta Horn was observed damaging alfalfa in Inyo County. This insect is a native of the sage brush country and has not been observed heretofore as a crop pest.

An outbreak of the Colorado potato beetle in a restricted area in Idaho is attracting considerable attention, and the possibility of eradicating the pest has not been abandoned.

The Mexican bean beetle is now well established at North Collins and Goranda in western New York State, and along the northern border of Pennsylvania eastward to Tioga, Center, and Huntington Counties and along the southern border of the State to Lancaster County. No material advance has been made toward the South with the exception of a few counties in the northern half of Georgia and three counties in the northeastern corner of Mississippi. Much damage is being reported from the east-central infested areas.

The boll-weevil situation as a whole is unfavorable. In the eastern part of Texas far more injury is reported than usual for this time of the year. In central Texas damage does not appear to be serious. In Arkansas the weevil appears to be more abundant in the western portion of the State than in any year since 1923; apparently the eastern portion of the State is not so seri-

ously infested as the western portion. In Louisiana infestation has been complete for at least 10 days, however, owing to "spotted" conditions of weevil infestations some fields are still making cotton. In Mississippi 40 per cent of the squares are punctured in the hill counties, being a marked increase over those infested in the earlier part of the month; the weevils were four times as abundant on August 20 as they were on this same date last year. The flooded areas of the Delta are still practically free of the weevil. In Alabama the weevil has continued to multiply in enormous numbers in the south-central part of the State, and some fields in part of the Piedmont region will not yield over 50 bolls of cotton to the acre. Georgia will harvest a very poor crop of cotton over the southern two-thirds of the State; the loss is estimated at from 40 to 50 per cent, while hundreds of acres will not be picked; damage decreases progressively northward. In South Carolina the average infestation in the vicinity of Florence is 77.36 per cent; weevil infestation, however, was generally light in this State and found only in scattered areas in the lower and middle Piedmont section. In North Carolina increasing damage by this insect is reported throughout the cotton section, damage being much more serious in the southern counties.

No commercial damage by cotton flea hoppers is reported from the cotton belt with the exception of a few isolated fields in parts of Texas.

The cotton leaf worm is decidedly later than usual this year; consequently little damage is to be anticipated to deciduous fruit and grapes in the northern States, and the cotton is so far advanced that but little damage can result from the feeding of the larvae.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR AUGUST, 1927

The Mexican bean beetle was found in Canada for the first time on July 20, at Cedar Springs, Kent County, Ontario, north of Lake Erie. Subsequent scouting has revealed the insect at numerous points in Kent and Essex Counties, and isolated collections have been made in Halton, York, and Peel Counties, northwest of Lake Ontario.

Scouting to determine the distribution and spread of the European corn borer in Ontario and southern Quebec is now under way. Preliminary scouting work has also been started in the Maritime Provinces where this insect has not yet been found.

A widespread outbreak of the beet webworm occurred in central and southern Saskatchewan, economic damage chiefly being confined to gardens. A patchy outbreak occurred on sugar beets in southern Alberta, but caused no serious loss.

Reports from central Saskatchewan indicate a heavier and more widespread infestation of the red turnip beetle than has occurred for many years. This species was also reported as quite severe in the Bulkley valley, British Columbia.

The flax armyworm, Borathra configurata Wolk., is more abundant than ever before in certain sections of southern Alberta, attacking alfalfa, sweet clover, garden flowering plants and weeds.

There have been few reports of severe cutworm damage from any part of the Dominion.

Difficulty in effectively controlling the Colorado potato beetle this season owing to the frequent rains washing off spraying materials, has been reported from sections of the Maritime Provinces and Ontario. In southern Manitoba, this insect has decidedly increased in numbers over 1926, but it has been a serious pest in only a few localities. Heavy infestations are reported from southern Alberta.

The European earwig is increasing rapidly in the Vancouver and New Westminster districts, British Columbia, where houses and gardens are heavily infested.

There has been a severe outbreak of the green apple aphid in Ontario, which, in intensity and duration, has been the worst yet experienced.

Fruit tree leaf-rollers have been very scarce throughout the Okanagan Valley, British Columbia, this season.

Numbers of the introduced codling moth parasite Ascogaster carpocapsae Vier. have been liberated at points in the Okanagan Valley and southeastern British Columbia.

Fir and spruce sawflies, Neodiprion abietis Harr., and Pachynematus ocreatus Harrington, are widespread and unusually abundant in southern Manitoba.

The infestation of the spruce budworm in the southern half of Cape Breton Island, affecting spruce, balsam, hemlock, and larch, is decidedly less severe than in 1926. Spruce and balsam trees dead or dying from the attack of this insect are heavily infested with Monochamus scutellatus Say.

The house mosquito, Culex pipiens L. has been found developing in immense numbers in extensive semistagnant backreaches of the Ottawa River at Hawkesbury, Ontario.



GENERAL FEEDERS

WHITE GRUBS (Phyllophaga spp.)

Indiana J. J. Davis (July 30): White grubs were reported damaging strawberry at Indianapolis, and golf greens at Gary.

H. K. Riley (Aug. 20): White grubs were reported damaging golf greens at Culver Military Academy.

Illinois W. P. Flint (August 18): Numerous reports have been coming in of damage by these insects to lawns and field crops. Thus far all injury reported has been in the central and northern counties of the State. Grubs are slightly under size for this period in the second year of their growth.

Nebraska M. H. Swenk (July 25 - August 25): During the period covered by this report complaints of injury by white grubs have continued to come in steadily. Most of these complaints refer to injury to strawberry beds, as previously, but some also describe serious injury in cornfields, and also in truck patches to carrots, beets, onions, and other vegetables, and still others to injury to private hedges, and to gladiolus and other plants in flower gardens. White grubs have been exceedingly destructive this season.

LUBBER GRASSHOPPER (Brachystola magna Gir.)

Alabama J. M. Robinson (August 1): Lubber grasshoppers are abundant in Escambia and Tuscaloosa Counties.

CEREAL AND FORAGE - CROP INSECTS

MISCELLANEOUS FEEDERS

FALL ARMYWORM (Laphygma frugiperda S. & A.)

North Carolina J. N. Tenhet (August 17): Twelve-acre field of corn attacked. Corn is in silk, and although infestation is heavy, corn will probably mature before damage is very severe.

Georgia H. S. Swingle (July 28): Fall armyworm now moving in large numbers from crab grass, growing in orchards, to adjacent cornfields.

Illinois W. P. Flint (August 18): The fall armyworm has been reported from many cornfields in the southern third of the State. The infestation extends to a little below the latitude of St. Louis. All cases of injury reported are from corn. The worms are full-grown and going into the pupal stage at this time, so that another brood will certainly occur in the State this fall. Severe damage to corn has been reported in several cases.

Alabama

J. M. Robinson (August 1): The fall armyworm is beginning to show up in several places in the state, particularly in the Piedmont section. We have not determined how extensive the infestation is. (August 16): The fall armyworm has been active in the Piedmont region of the State, and they have grown considerably more abundant in the past week.

Mississippi

R. W. Harned (August 22): The southern grassworm has been very abundant in Mississippi during the past month. A large number of complaints accompanied by specimens have been received at this office. Both cotton and corn have in some cases been quite seriously injured. Specimens collected on corn have been received from Sunflower, Warren, Sharkey, Tate, Washington, Marshall, Alcorn, and Quitman Counties. Specimens collected on cotton have been received from Humphreys, Tallahatchie, Yazoo, Warren, Lauderdale, Sharkey, Bolivar, and Washington Counties. Specimens on sorghum were collected on the property of the Delta Experiment Station at Stoneville in Washington County.

Texas

F. C. Bishopp (August 10): Some complaints have been received of these worms attacking Bermuda grass and other pasture grasses in this vicinity. The worms appear to have done very little damage to cotton or other crops.

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Illinois

W. P. Flint (August 18): On the whole, the Hessian fly infestation in Illinois is very much the same as in the Fall of 1926. There has been a slight increase in infestation in the eastern counties and a slight decrease in the southern Counties, while the infestation in the central and west-central counties is approximately the same as last year. The average infestation for the State this year is 4.29 per cent, or in other words out of every 100 wheat stems in the State, 4 now contain flaxseeds of the Hessian Fly, from which a brood of adult flies will begin emerging this fall. This is shown by the results of the annual wheat insect survey which is conducted each year during the first two weeks of August by the entomologists of the Natural History Survey. This year entomologists of the Federal Bureau of Entomology have cooperated in this work.

One of the outstanding conditions shown by the survey is that of the even distribution of fly over all sections covered. In southern Illinois, where the infestation is the lightest, a little less than one-third of the fields show infestation, but in other sections of the State nearly all fields contained the fly in small to moderate numbers. The percentage of fly killed by parasites or other causes was fairly high in southern Illinois, and about normal in the other sections.

Summing up the results of the Survey, we apparently will have very close to normal emergence of the Hessian fly this fall. That is, the main brood will come out on about the average date. Apparently the brood will be rather well bunched and not scattered out as is the case in some years. There is likely to be a moderately heavy infestation in early-sown wheat in the eastern and central parts of the State, with a light infestation in early-sown wheat in southern and western Illinois. The fly-free date will probably hold very close to those indicated on the enclosed map this year.

The fly has caused very little damage in Illinois during the last few years, but it is in a good position to come back strong if early seeding is generally practiced in any section.

and

C. C. Hill and H. D. Smith (August 19) The following table shows the percentage of wheat culms found infested with the Hessian Fly. The infestation was much lighter on the Eastern Shore than in western Maryland. The average county infestation for the State was 12 per cent as compared with 2 per cent infestation found in 1925 and 1926. Occasional wheat fields in western Maryland showed considerable damage from the fly, and these may be a source of heavy infestation for the coming season.

Western Maryland		Eastern Shore	
County	Per cent	County	Per cent
Anne Arundel	22	Cecil	11
Baltimore	11	Dorchester	16
Carroll	29	Somerset	10
Frederick	31	Wicomico	12
Montgomery	34	Average	12
Washington	31		
Average	27	Average for the State	21

#### WHEAT STEM MAGGOT (Meromyza americana Fitch)

n Dakota

H. C. Severin (August 8): Reports of usual damage by the wheat stem maggot to wheat and barley over the State, have been received.

#### JOINT WORM (Harmolita tritici Fitch)

nois

W. P. Flint (August 18): An infestation in Hancock County of 28 per cent with light infestations in a few of the western and southwestern counties of the State.

#### A FALSE WIREWORM (Eleodes hispilabris Say)

o

C. Wakeland (July 29): False wireworms have destroyed many acres of wheat in the dry farming areas of eastern Idaho this season. Several of the farmers are planning a poisoning campaign against the beetles this fall.



CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

General L. H. Northley (August 20): The following is a complete list to date of all counties from which new township records for the European corn borer have been received this season: Allen, Auglaize, Coshocton, Delaware, Franklin, Hardin, Holmes, Knox, Licking, Logan, Madison, Marion, Mercer, Miami, Morrow, Shelby, Tuscarawas, Union, and Van Wert, OHIO; Adams, Allen, Kosciusko, LaGrange, Noble, Tells, and Whitley, INDIANA; Clinton and Eaton, MICHIGAN; Bedford, Columbia, Fayette, Huntingdon, Montour, Northumberland, Somerset, Union, and Wyoming, PENNSYLVANIA; Delaware, NEW YORK.

Those underlined are new county records also. Although the degree of infestation found and the chance of spread from these areas before fall are extremely slight, a change in the quarantine line is contemplated as soon as more territory has been covered by the scouts.

Ohio and Michigan Monthly Letter, Bur. Ent. No. 159, (July, 1927): Adults of the imported parasite Exoristes roborator Fab. have been recovered in the parasite conservation cages at Monroe and Erie, Mich., and at Sandusky, Ohio.

General Monthly Letter, Bur. Ent. No. 159, (July, 1927): A portion of the foreign parasites of the corn borer which have been shipped from Arlington to the Middle West for liberation in the field have included adults of Angitia punctoria Roman, which were reared from corn-borer material collected in New England. This foreign parasite of the corn borer, originally introduced into New England, has been recovered in increasing numbers each year in that area, and is now being used for recolonization.

CORN EAR WORM (Heliothis obsoleta Fab.)

Georgia H. S. Swingle (July 28): The corn ear worm is causing considerable damage to late corn in this section. In one field as high as five larvae were found feeding on the top of a single plant. Practically every plant in one section of the field was injured.

Ohio E. W. Mendenhall (August 18): The corn ear worm is very serious and general in Ohio this year.

Indiana J. J. Davis (July 30): The corn ear worm has been reported within the past few days eating into the developing tassels of corn from Indianapolis, Rushville, and Campbellsburg.

H. K. Riley (August 20): The corn ear worm was reported damaging sweet corn at Huntington and Warsaw, and popcorn at Cicero.

Iowa C. N. Ainslie (August 13): Sweet corn in gardens is almost univer-



sally attacked by this pest and field corn is also suffering severe injury, nearly or quite as great as last year. Larvae are nearly mature at this time.

C. N. Ainslie (August 26): The cold wet spring of the present year retarded the planting and germination of corn to such an extent that adults of the corn ear worm had practically disappeared before the ears developed silk. As a result almost no injury is being done by this pest this year in the territory tributary to Sioux City. Many fields of corn, even at this date, are just in the fresh silk stage and it is possible that moths may appear in time to oviposit before the silk dries, in which case another brood may develop.

Mississippi

R. W. Harned (August 22): Complaints in regard to the corn ear worm or cotton boll worm have been received recently from several localities. Corn was the crop being injured at Yazoo City in Yazoo County, Roxie in Franklin County, and Lorena in Smith County. Cotton was being injured at Lamkin, Nitta Yuma, and Suter in Sharkey County, Yazoo City in Yazoo County, and Hollandale in Washington County.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Mississippi

R. W. Harned (August 22): Only one complaint has been received recently in regard to the lesser corn stalk borer. Specimens of this insect collected on sorghum were received on August 12 from the Delta Experiment Station at Stoneville.

CHINCH BUG (Blissus leucoconterus Say)

Illinois

V. P. Flint (July 19): J. H. Bigger has just completed a survey of chinch bug conditions in the area which was most heavily infested in the early spring. In spite of the heavy rains during May and June, enough bugs have survived to cause some damage in the south central counties. A month ago it seemed impossible that any damage from this insect could occur in this section, but a period of approximately 25 days without rain has enabled the chinch bug to come back in surprisingly large numbers in some sections. If the remainder of the summer continues moderately dry, there will be a chance for a sufficient number of second brood bugs in this region to cause serious damage in 1928. (August 18): During the past month there has been several reports of chinch-bug damage in the south-central counties and two rather isolated reports of damage in the north-central counties. The actual loss from this insect in the State this year will be rather small.

Nebraska

M. H. Swenk (July 25-August 25): Continued cool weather during August, together with one or more heavy rains in most localities in southeastern Nebraska where the chinch bug has been troublesome

during the past several seasons, has apparently had the effect of still further reducing the numbers of this pest, through interference with the development of the second brood. The weather of the entire spring and summer of 1927 has acted adversely to this insect, and a diminution of its injuries is expected in most localities in this State next year. In some localities, however, the second brood is now present in the cornfields in a fair abundance.

ARMYWORM (Cirphis unipuncta Haw.)

- Illinois W. P. Flint (July 19): While there have been no serious armyworm outbreaks, a moderate number of larvae can be found in cornfields in nearly any section of the State.
- Iowa C. J. Drake (August 2): Armyworms occur in large numbers in the counties of Franklin, Hardin, and Iowa. In a 65-acre field of oats in Hardin County, we found the caterpillars beneath the shocks of oats to run from almost 100 to over 400 per shock. When shocking the oats the farmer counted 142 armyworms beneath a single bundle. The worms vary in size from about one-third grown to mature caterpillars. In Iowa County a couple of fields of corn have been badly injured by armyworms, the caterpillars migrating from oat fields.
- South Dakota H. C. Severin (August 8): Damage reported by the armyworm to small grain and corn, especially in old Lake beds in Wilmot and Ortleigh Counties.

BLACK CUTWORM (Agrotis ypsilon Rott.)

- Illinois W. P. Flint (July 19): Conditions have been very favorable. Damage by this species of cutworm has been reported from all parts of Illinois. In many cases the larvae are still working on corn which is 8 to 20 inches high. Where they are attacking corn of this size they usually bore into the lower part of the stalk, oftentimes entering the stalk. Actual counts of damage by these worms in one of the central counties show a destruction of the corn amounting to from 15 to 45 per cent of the hills. Some fields have been so severely damaged that they have been abandoned.

CORN ROOT APHID (Aphis maidi-radiciis Forbes)

- Missouri K. C. Sullivan (July 29): The corn root louse is unusually bad this season, and we are receiving inquiries from all sections of the State.
- Nebraska M. H. Swenk (July 25-August 25): Complaints of injury by the corn root aphid referred to in my last report continued through the month of July.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

- Indiana J. J. Davis (July 30): The southern corn root worm continues to be reported from various sections of the State, especially central

Indiana, as a serious pest of corn. Today we received our first reports of injury by the beetles, since early reports this spring, the report coming from Shelbyville where the beetles were damaging garden beans, eating into the green pods.

H. K. Riley (August 20): The southern corn root worm was reported as seriously damaging corn at Chalmers August 9.

Illinois

W. P. Flint (July 19): Many specimens of this insect are being sent in from southern and central Illinois. Damage by these larvae is not confined to the bottom lands but is rather general in fields where a heavy growth of clover or seed clover occurred during the early spring and which were plowed late. As is usually the case, it is reported causing serious damage to the bottom lands along the rivers which were overflowed during the early spring.

Iowa

C. J. Drake (August 2): The southern corn root worm is extremely abundant in southeastern Iowa. On one farm in Lee County 600 acres of corn were badly infested by the beetle. A number of other reports were received from southeastern Iowa. The adult beetles of the first generation are emerging very rapidly at the present time.

Missouri

K. C. Sullivan (July 29): The southern corn root worm is causing unusual damage to the corn, especially the late corn which has been planted in the overflow areas along the Missouri and Mississippi Rivers. In these places the injury is widespread and the loss will be tremendous.

CORN ROOT WORM (Diabrotica longicornis Say)

Illinois

W. P. Flint (August 18): Several reports of serious damage by the northern corn root worm have come in from the central Illinois counties. In all cases the injury occurred where corn had foliowed corn.

Nebraska

M. H. Swenk (July 25-August 25): Corn root worms have been the outstanding pest to the corn crop of Nebraska during the past month. Complaints of much falling corn due to the destruction of the root system by the western corn root worm began to be received by the end of July, and have kept coming in unabated to the present date. Although this trouble is general over eastern Nebraska, it is worst in the northeastern corner, from Knox, Antelope, Madison, and Dodge Counties east and north to the Missouri River. In many localities in this area hundreds of acres of corn have been seriously injured and following heavy rains the corn has largely gone down in many fields. Expectations of reduced yields because of this trouble are freely expressed by farmers in this region; one correspondent states that he would not get more than 10 bushels to the acre in a corn-field that yielded 50 bushels to the acre last year. In western, and especially in southwestern Nebraska, similar trouble, due to the Colorado corn root worm, Diabrotica virgifera Lec. a pest not here-



tofore found in Nebraska by us, has been reported during the same period. This infestation and injury seem most severe in Hitchcock and Red Willow Counties, but extend north to Dawes County.

A WIREWORM (Monocrepidius vespertinus Fab.)

North  
Carolina

J. N. Tenhet (August 18): A month ago this click beetle was present in large numbers in leaf sheaths of corn, and could be readily taken at trap lights. At this date, however, they are becoming very scarce and are difficult to find in any numbers. Evidently the period of adult activity is about at an end for this season.

Nebraska

M. H. Swenk (July 25-August 25): During the first week in August an abundance of beetles of the southern corn wireworm Monocrepidius vespertinus was reported from a cornfield in Clay County.

WIREWORMS (Elateridae)

Missouri

K. C. Sullivan (July 29): It seems that wireworms are causing more than ordinary injury to corn, especially in southern Missouri.

SEED CORN BEETLE (Agonoderus pallipes Fab.)

Nebraska

M. H. Swenk (July 25-August 25): There has been an abundance of the seed corn ground beetle in certain cornfields in eastern Nebraska during the present season.

ALFALFA

PEA APHID (Illincia pisi Kalt.)

Idaho

C. Wakeland (July 29): During the past seasons the pea aphid has been of greater or less abundance in nearly all alfalfa fields. In a few fields in the past it has been observed in countless numbers but the alfalfa had made good growth before the infestations became large and no special injury could be attributed to it. This season alfalfa plants became heavily infested while they were still small, growth of alfalfa was slow, owing to the cool weather, and the aphids killed back the first crop completely in many fields and retarded second growth. In two instances growers applied granular calcium cyanide and report that they are well satisfied with results, for they obtained a first cutting of alfalfa which more than paid for the expense of the treatment. Parasites were quite numerous in the infested fields from the start and before the first crop was ready to cut they had almost completely destroyed the aphids. Lady beetles, an undetermined species of syrphus fly, and two undetermined species of hymenopterous parasites were of greatest importance. It was interesting that control would be established in one field by lady beetles, in another by syrphus flies, etc., but that all species of parasites did not occur abundantly in the same field.



ALFALFA WEEVIL (Plytomanus posticus Gyll.)

ho C. Wakeland (July 29): The alfalfa weevil has been more destructive in eastern Idaho than it has been since 1921. In the extreme eastern part of the State, where it has been of no economic importance before, it caused heavy loss on first-crop alfalfa and has greatly retarded the growth of the second crop. In the Grimm seed district of eastern Idaho it was abundant enough in some fields this season to justify spraying but it has been of so little importance during the preceding two years that growers were unprepared for spraying this season. In western Idaho larvae became quite abundant in a few fields and spraying was done. In general, however, infestations were so light that savings resulting from spraying would not have justified the expense.

A. SOLDIER BEETLE (Tegrodera latecincta Horn)

ifornia T. D. Urbahms (July 16): On this date J. W. Dixon reported soldier beetles, Tegrodera latecincta, as invading alfalfa fields near the native sage brush, feeding on the young shoots and checking the growth. While the insect is a native and usually present, this was the first time it has been observed as damaging cultivated plants near Manzanor, Inyo County.

ONION THRIPS (Thrips tabaci L.)

raska M. H. Swenk (July 25-August 25): The onion thrips appeared this summer in the alfalfa fields in the valley north of Harrison, Sioux County, where it is apparently interfering very seriously with the prospective alfalfa seed yield, by blasting the alfalfa blossoms.

BLACK BLISTER BEETLE (Epicauta pennsylvanica DeG.)

raska M. H. Swenk (July 25-August 25): The small black blister beetle was reported as common, but doing no great damage, in an alfalfa field in Saunders County during the second week in August.

A MYRIAPOD (Polydesmus serratus)

raska M. H. Swenk (July 25-August 25): The myriapod Polydesmus serratus appeared in unusual abundance in the alfalfa and small grains fields of Merrick and York Counties during the last week in July, where it attracted attention by migrating at night in large numbers, and hiding in the daytime under grain shocks, or any other objects on the ground.

CLOVER

CLOVER SEED MIDGE (Dasyneura leguminicola Lintn.)

ho C. Wakeland (July 29): Very destructive in clover seed fields in southwestern Idaho this season. In the Emmett and New Plymouth

districts 90 per cent of the first crop of seed was destroyed in some instances and the loss in all fields was heavy. Infestation is great only on 2-year-old fields, amounting probably to not more than 10 per cent in fields seeded in 1926.

CLOVER APHID (Anuraphis bakeri Cowan)

Idaho

C. Wakeland (July 29): Clover fields unusually heavily infested this season forced many growers to cut the first crop for hay and to try to produce seed on second crop. Many fields so handled are in their second seed year and will produce little seed on second crop so that the clover aphid is responsible for a heavy reduction of seed yield. Also, on first-year crops second crop seed will probably be light because of prolonged cool cloudy weather following the clipping of the first crop which permitted second crop to start growth immediately and furnish food and protection for surviving aphids. There will be much "honeydewed" seed this fall.

GRASS

A SPITTLE INSECT (Lepyronia quadrangularis Say)

Mississippi

R. W. Harned (August 22): At the present time the work of spittle insects is conspicuous on Johnson grass and numerous other plants in the vicinity of the A. & M. College. Possibly more than one species is at work, but the only species so far reared to the adult stage has been identified as Lepyronia quadrangularis.

DECIDUOUS - FRUIT INSECTS

MISCELLANEOUS FEEDERS

APHIDAE

South Dakota

H. C. Severin (August 8): Many species of aphids have been unusually abundant this year. The year as a whole has been wetter and cooler than usual.

A GRASSHOPPER (Schistocerca venusta Scudd.)

California

O. E. Essig (August 15): Damage in Paradise Valley to orchards, pear trees in particular.

JAPANESE BEETLE (Popillia japonica Newm.)

New Jersey

L. B. Smith (August 30): The Japanese beetle has been found this summer at the following points outside the regulated area: Wilkes-barre, Lehigh and Gettysburg, Pa.; Baltimore, Cambridge and Chesapeake City, Md.; Clayton, Del.; Washington, D. C.; Linden-

dividual beetles have been found in several freight yards outside the regulated area, the indications being that they were carried there in or on cars of non-agricultural freight from the heavily infested districts. While it is not practicable to change the quarantine line during the scouting season, provision is made to restrict the movement of any nursery stock or farm products from the outside points when the beetle has been found recently established. Most of the finds outside the regulated area have thus far occurred in built up residential areas. Cold, rainy weather during August retarded the activity of the beetles, and may result in greatly reducing the natural spread of the insect during 1927.

Monthly Letter, Bur. Ent., No. 159 (July, 1927): After having been colonized for three years in the Japanese beetle area, the single-generation dextiid parasite Prosona siberita has finally been recovered at the Moorscote, N. J., colony center. This is the third imported parasite of the Japanese beetle to have been recovered, the other two being the tachinid Centeter cinerea, which destroys the beetles, and the scoliid Tiphia popillivora, attacking the grub stage.

Monthly News Letter, Bur. Ent., No. 159 (July, 1927): In the present season the colonizations of Prosona siberita, Ochromaigenia ornioides, Tiphia vernalis, and the so-called "Japanese red-legged" Tiphia have been much larger and more satisfactory than in former years. This achievement has been due in large measure to the excellence of the shipments from Japan, and to the gradual improvement in the technique of handling at the receiving station.

#### THE ANOMALA (Anomala orientalis Waterh.)

New York

Monthly Letter, Bur. Ent. No. 159 (July, 1927): Shipments of Dexia ventralis, a Korean fly attacking a number of scarabaeid larvae, and a Tiphia attacking Anomala, were recently sent from the station at Riverton, N. J. to H. C. Hallock, at Westbury, L.I., for trial colonization in the territory infested with the oriental Anomala and Aserica.

#### RED SPIDER (Tetranychus telarius L.)

Idaho

C. Wakeland (July 29): The attack of the red spider is coming later than usual in orchards but it is now severe. Prune trees are being rapidly defoliated and spraying for control is being done. Since early spring it has been abundant around house foundations and in gardens, causing severe injury to flowers and ornamentals.

#### APPLE

#### APPLE APHID (Aphis pomi DeG.)

New York

C. R. Crosby & assistants (July 15): Serious infestations have

been found all over the State. Many growers are applying special control measures. In general the infestations on pear are light. The fruit on bearing trees is being attacked. (August 13): Injury from the green apple aphid has been common throughout the State. At the present time, because of the activity of parasites and predators, little damage is being done. While this certainly was an outbreak year the damage in general was not quite so serious as in 1918. Commercial orchards show some blackening of the fruit and leaves but it is not likely that much fruit is deformed or will be blackened up by harvest.

Indiana B. A. Porter (August 27): The severe infestations reported last month have mostly subsided, after the aphids had caused severe damage in many orchards.

Idaho C. Wakeland (July 29): The apple aphid is much more abundant in all apple orchards this season than usual. Noticeably few parasites present.

ROSY APPLE APHID (Anuraphis roseus Faker)

Idaho C. Wakeland (July 29): Heaviest infestations of this aphid in apple orchards that have occurred for at least seven years. They remained on the trees until July 1 in some instances and caused a great many shrunken and deformed apples.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Indiana J. J. Davis (August 1): The woolly apple aphid is abundant throughout the State but apparently of no economic importance regardless of its frequent occurrence.

H. K. Riley (August 20): The woolly apple aphid was reported from Liberty August 6.

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

Massachusetts A. I. Bourne (August 18): Red-humped caterpillars have begun to make their appearance and their conspicuous work has been the cause of numerous complaints. From our observations to date I should figure they were about normal in abundance, infestation not being so serious as was the case last year.

CODLING MOTH (Carpocapsa pomonella L.)

Indiana J. J. Davis (August 1): The weather during July was ideal for codling-moth development, and the infestation in southern Indiana is again threatening

B. A. Porter (August 27): Weather conditions continue unfavorable to the rapid development of the codling moth. Indications are



that the third brood will be extremely light. In orchards where the spraying has been poorly done the worms are moderately abundant, but growers who have sprayed with reasonable thoroughness have had very much less difficulty in controlling the worms than was experienced in 1925 and 1926.

Georgia

R. M. Seeley (July 29): The codling moth is doing unusually heavy damage to apples in northern Georgia.

Illinois

W. P. Flint (July 19): Adults of the second brood codling moth started emerging in southern Illinois about July 6. Emergence has been rather slow in this section. In central Illinois, emergence started on July 14. According to our observations at present, the conditions in the commercial orchards of the State are much better than was the case one year ago. The weather of the season has been favorable to the development of the codling-moth larvae and considerably greater effort has been made on the part of orchardists to keep down this insect. In poorly sprayed orchards, however, the present infestation, which is by first brood larvae, will run from 10 to 18 percent, according to figures gathered by Mr. Bigger in the orchard sections of western Illinois.

Idaho

C. Wakeland (July 29): The late, cool season caused an exceptionally light infestation of first-brood larvae. First-brood larvae are still emerging in large numbers from the apples, which means there will be a late infestation of second-brood larvae. Because of spray-residue problem most growers will not spray after August 1, so it appears probable that there will be a heavy infestation of late worms.

APPLE AND THORN SKELETONIZER (Hemerophila parigra Clerck)

New York

C. R. Crosby and assistants (August 16): The infestation in the Hudson Valley is confined almost exclusively to neglected orchards. Even here the infestation is light. Injury is noticeable in the southern part of Wayne and Monroe Counties. Many orchards which are neglected or poorly cared for are found infested in Tompkins, Cayuga, Cortland, Madison, Schuyler, Steuben, Seneca, Ontario, and Yates Counties.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Pennsylvania

F. F. Smith (August): In Philadelphia vicinity, the species continued to be present in large numbers during 1927. Some reason for this should be found. From material reared out during 1925 it would seem that secondary parasites were a factor in limiting the numbers of primary parasites

APPLE MAGGOT (Phaenolepis pomonella Walsh)

Massachusetts A. I. Bourne (August 18): The railroad worm to date does not appear to be quite so abundant as last year; nevertheless, early varieties of fruit which are being harvested show considerable infestation. It is a little too early to forecast what conditions will be on the main and late season varieties. Judging from the flies it will not be quite so severe an infestation.

New York C. R. Crosby and assistants (August 16): Emergence of flies stopped about August 6 in the Hudson River Valley. Emergence started later this year than common and according to records made from flies taken in cages the peak of the emergence was reached about July 26 in the Champlain Valley, about July 16 to 22 in Greene County, while in Orange and Ulster Counties flies were found most commonly towards the end of July.

APPLE LEAFHOPPERS (Empoasca mali LeB. et al.)

Massachusetts A. I. Bourne (August 18): Apple leafhoppers have shown themselves to be considerably more abundant than usual and in some orchards are causing a considerable amount of damage.

Connecticut Philip Garman (August 24): The apple leafhopper is reported to be very bad in several orchards in New Haven County.

Ohio E. W. Mendenhall (August 9): The apple leafhopper is quite bad in the nurseries in southwestern Ohio and does some damage to the leaves.

LEAF CRUMPLER (Mineola indigenella nebulella Riley)

Kansas R. L. Parker (August 3): The leaf crumpler has been reported attacking apple.

Mississippi R. W. Harned (August 22): Apple leaves injured by the apple leaf crumpler were received from West Point on July 30 and from Buleville on August 1.

A CHRYSOMELID BEETLE (Rhabdonterus picipes Oliv.)

New York M. E. Buckman (July 23): A small amount of injury from this insect was found on apple fruits in several orchards.

YELLOW-NECKED APPLE CATERPILLAR (Datana ministra Drury)

Indiana J. J. Davis (August 1): The yellow-necked apple caterpillar was common on apple at Williamsport July 26.

CECROPIA MOTH (Samia cecropia L.)

Indiana H. K. Riley (August 20): Larvae of Samia cecropia stripped leaves on an apple tree at Sheridan.

EUROPEAN RED MITE (Paratetranychus pilosus G. & F.)

Connecticut Philip Garman (August 24): Some apple orchards show serious browning of foliage. Winter eggs are being laid rapidly.

New York C. R. Crosby and assistants (August 16): Injury from this pest is more serious than last year. Neglected or poorly sprayed orchards show distinct bronzing of the leaves. Injury to apple is more common and serious in the Hudson River Valley.

Delaware H. L. Dozier (July 20): The European red mite is very abundant in several commercial apple and peach orchards near Camden and Newark. Leaves were grayed by this date.

PEAR

PEAR PSYLLA (Psylla pyri L.)

Massachusetts A. I. Bourne (August 18): The pear psylla has been unusually abundant throughout the entire State this season. As I stated in one of my earlier reports, we encountered such unfavorable weather conditions that the early sprays which ordinarily hold this pest in check were of comparatively little value, so that the pest has persisted in considerable abundance throughout the summer.

Connecticut Philip Garman (August 24): A very severe outbreak throughout the State. The growers have obtained good control.

New York C. R. Crosby and assistants (August 13): Serious injury has been reported from all pear-growing sections in the State. It is an outbreak year. Partial defoliation of trees and considerable smutting of fruit and foliage is a common sight. Where two sprays have given control for the past two or three years, it has been necessary to apply about four sprays to give control this season.

BEAN THRIPS (Heliothrips fasciatus Perg.)

California T. D. Urbahns (July 19): On July 19 the bean thrips was appearing in great numbers on pear trees in the Monticello district, Napa County, where they had severely marked the fruit and caused drying of the foliage during the season of 1926.

E. C. Essig (August 15): Produced a blackening of the leaves locally known as "black leaf." Many pear trees partially or entirely defoliated, which exposes the fruit to sunburn.



PEAR SLUG (Caliroa cerasi L.)

Ohio E. W. Mendenhall (August 23): The cherry and pear trees on the c  
lots, especially in Newark, are badly infested with slugs.

PEACH

PEACH TWIG BORER (Anarsia lineatella Zell.)

California T. D. Urbahns (July 22): On July 22 field observations made in c  
nection with the peach twig borer in the large canning peach cen-  
ters of Sutter and Yuba Counties show that the infestation is un-  
usually light during the present season, most of the orchards be-  
ing practically free from larvae at the present time.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Connecticut Philip Garman (August 24): A general increase in abundance of the  
oriental peach moth has been noted in New Haven, Fairfield, and  
Hartford Counties. The insect, while not more abundant in any on  
orchard, shows a general increase and occurs in abundance in more  
orchards than heretofore. More than 50 per cent of the second  
brood parasitized by Macrocentrus sp.

New York C. R. Crosby and assistants (August 13): Injury to the tips of  
shoots of peach is fairly common in Dutchess, Ulster, Orange, and  
Rockland Counties. Fruit injury is becoming apparent.

Delaware H. L. Dozier (August 1): Wormy fruit from oriental peach moth wor  
is common on peaches.

Maryland A. L. Quaintance (August 29): Earlier in the season very heavy tw  
infestation was observed but due to cool weather the brood that  
should be infesting fruit now did little damage.

Georgia O. I. Snapp (July 28): The heaviest infestation that has been re-  
corded in this State to date was observed today at the Georgia Ex-  
periment Station. Seventy-five per cent of the twigs in a variety  
peach orchard showed either old or fresh oriental peach moth work.  
In this orchard are varieties of peaches that ripen up to the time  
of frosts, and nearby are apples and pears. These late fruits  
have evidently furnished a host for the 1st. generation. A com-  
mercial peach orchard 2 miles east of Hampton showed an average in-  
festation of 20 per cent of the twigs on this date. Some of the  
trees in this orchard have as high as 80 per cent of the twigs in-  
jured, while the injury on others was as low as 5 per cent. Fruit  
from this orchard had also shown a number of larvae. There were  
apple trees adjoining, and doubtless these furnished hosts for the  
late generations last year. The oriental peach-moth infestation  
in this commercial orchard is three times as great this year as la

Delaware H. L. Dozier (September 1): Serious damage to peaches in Bridge-  
ville section by the oriental peach moth. There are apparently tr



E. W. Mendenhall (August 20): The oriental peach moth is quite bad in Montgomery County this year.

PLUM CURCULIO (Conotrachelus prunivorus Hbst.)

H. L. Dozier (August 1): Wormy fruit from the curculio on peaches is common.

R. M. Seeley (July 29): Plum curculio infestation has been reported as heavy on peach throughout the State.

CHERRY

LESSER PEACH BORER (Sesia pictipes G. & R.)

E. W. Mendenhall (August 9): I find a number of cherry trees in Columbus affected with the lesser peach borer.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

M. E. Buckman (August 4): Serious injury has been found in a young cherry orchard which was apparently in good health.

PRUNE

PEACH BORER (Aegeria exitiosa Say)

C. Winkeland (July 29): The peach borer has been very destructive to prune orchards in the Boise-Meridian district this spring.

BLACKBERRY AND LOGANBERRY

BLACKBERRY MITE (Eriophyes sp.)

E. O. Essig (August 15): The blackberry mite was found not only on Himalaya blackberry, but for the first time on Mammoth blackberries and loganberries.

RASPBERRY FRUIT WORM (Byturus unicolor Say)

J. F. Graf (July 25): Several days ago we learned that commercial canners were rejecting loganberries in Kent and Puyallup districts, on account of worm infestation. Requested immediate investigation by Seattle and they now report all loganberry fields in Puyallup and Kent districts quite badly infested, varying from slight to 7 per cent. Further reports indicate serious infestation in Washo Island, Everett, and Bellingham districts. Canners in all districts refusing lots except those entirely free from worms. Every one greatly concerned on account of probability of complete financial loss. Many growers have stopped picking and rejected lots are being held by growers and canners with disposition undecided. Observations have so far shown no wormy berries being barreled. Undoubt-

edly others will attempt pressing wormy material for juice jel making. About two weeks of the season still remains.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Delaware H. L. Dozier (July 30): The grape leafhopper is now becoming v  
abundant in a number of commercial vineyards. This pest has b  
present this season only in limited numbers, in marked contrast  
to last season when they caused great damage and worry by their  
vast numbers.

Ohio E. W. Mendenhall (August 9): I find the grape leafhopper genera  
over the State again this year.

South Dakota H. C. Severin (August 3): The grape leafhoppers are present in  
usual abundance in eastern South Dakota.

GRAPE PHYLLOXERA (Phylloxera vitifoliae Fitch)

South Dakota H. C. Severin (August 8): The grape phylloxera is present in us  
ual abundance.

GRAPE BERRY MOTH (Polychrosis viteana Clem)

Delaware H. L. Dozier (August 4): The grape berry moth is threatening th  
total loss of this year's crop of grapes on two commercial vine  
yards near Dover. This insect has just begun to attract atten  
tion in this State during the past two seasons and promises to  
become an outstanding grape pest. This season the young larvae  
first started hatching about June 23 and pupated between July 2  
and 30. By the latter date, few worms were left in berries and  
on August 4 the first adults appeared for the second generation.

GRAPE LEAF SKELETONIZER (Harrisiana americana Guer.)

Ohio E. W. Mendenhall ( August 13): I find an outbreak of this pest i  
Miami County.

GRAPE COLASPIS (Colaspis brunnea Fab.)

Arizona Arizona News Letter (July 31): Grape leaves were badly eaten and  
perforated by the grape leaf beetle, in several places in the  
Salt River Valley. Probably the most severe injury was noted in  
a small planting serving as an arbor.

A THRIPS (Drepanothrips reuteri Uzel)

California T. D. Urbahns (July 8): On July 8 special field observations were  
made to determine the abundance of Drepanothrips reuteri Uzel.

in the Sacramento, Elk Grove and Lodi grape districts where it severely injured grapes in 1926. No indication of injury during the season of 1927 up to date.

PECAN

PECAN LEAF CASE BEARER (Acrobasis nebulælla Riley)

Alabama

J. M. Robinson (August 16): Acrobasis nebulælla is particularly active in Baldwin and Mobile Counties attacking pecan trees.

HICKORY NUT CURCULIO (Conotrachelus affinis Boh.)

Mississippi

R. W. Harned (August 22): Pecans that had fallen from a Stuart pecan tree at Sunflower on July 23 were found to contain larvae or grubs of curculios belonging to the genus Conotrachelus. This may be the hickory nut curculio, Conotrachelus affinis.

FLAT-HEADED APPLE-TREE BORER (Chrysobothris femorata Oliv.)

Arizona

Arizona News Letter (July 31): The flat-headed borer was found to have completely girdled some young pecan trees in a planting northeast of Phoenix. The trees were two years old from planting and bore evidence of having been attacked by the insects during the first season in the orchard.

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Georgia

R. M. Seeley (July 29): The black walnut caterpillar has been reported as unusually abundant throughout the State, especially on pecan and hickory trees.

A CHRYSOMELID BEETLE (Metachroma pallidum Say)

Alabama

R. W. Harned (August 22): On April 3, Mr. R. C. Price, formerly connected with the Plant Board of Mississippi, mailed to us some beetles collected on pecan at Mobile. These insects were mailed to Dr. L. O. Howard, and were determined by W. S. Fisher as Metachroma pallidum.

FIGS

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia

Snapp and Swingle (August 2): The San Jose scale has been found on the fruit of fig bushes in numbers sufficient to cause considerable damage. The insect apparently is not attacking the bush itself, but only the fruit. Spots on the fruit caused by this insect have been noticed for several years.

A MEALYBUG (Pseudococcus sp.)

Mississippi

K. L. Cockerham (August 16): This insect is very abundant at this season of the year on figs. We have had quite rainy weather this summer which has no doubt been responsible for the great number of these insects. There is rarely a summer passes that we do not have some of them.

A DARKLING BEETLE (Metoponium abnorme Lec.)

California

T. D. Urbahns (July 21): E. P. Roullard reported darkling beetle (Metoponium abnorme) attacking figs on the drying trays in Fresno County. Damage was reported as quite severe. On July 14, darkling beetles were very abundant in the apricot drying yards in the vicinity of Marced and feeding on the fruit.

CITRUS

CITRUS THRIPS (Euthrips citri Moulton)

California

E. A. McGregor (August 7): The citrus thrips is unusually severe this year. Many unsprayed groves are showing thrips scarring to the extent of 60 to 80 per cent of the crop. The resulting lowering of the grade will mean a very material loss to growers who failed to follow proper control practice. Even groves the spraying of which was ill-timed are going to pay the penalty this year.

AN ANT (Solenopsis sp.)

California

Monthly News Letter of the Los Angeles Hortic. Comm. (August 15): A medium sized bi-color ant, Solenopsis sp., commonly known as the fire ant on account of the burning sensation resulting from its bite, has, according to H. M. Armitage, Deputy Horticultural Commissioner, Los Angeles County, recently been observed as causing serious injury to tree citrons in the La Habra Heights section east of Whittier. Approximately six acres of five-year old trees were found to be infested, the ants feeding on the blossoms and stems of newly setting fruit as well as on the bark of some of the smaller and more tender branches. The manager for the property stated that practically the entire first crop of fruit for this season had already been destroyed. While this ant is of more or less general distribution throughout southern California, and is rather omnivorous in its feeding habits, this is the first record of its being injurious to an economic host in this country. Control measures are being worked out by the County Horticultural Commissioner's Office in cooperation with the owner's agents.



GRASSHOPPERS (Acrididae)

zona

Arizona News Letter (July 31): Grasshoppers were found to have injured citrus trees during July. Cases were observed where the major part of the foliage had been eaten away by the grasshoppers. In several instances the twigs and branches were girdled by the eating habits of the hoppers.

CICADA (Species undetermined)

zona

Arizona News Letter (July 31): Cicadas injured a number of newly set citrus trees in a number of plantings in the Salt River Valley. The injury is caused by the female cicada in the act of depositing eggs in the young tender twigs. Sometimes the twig growth is entirely killed but more often is so weakened that it easily breaks at the point of injury.

TRUCK - CROP INSECTS

MISCELLANEOUS FEEDERS

STALK BORER (Papaipema nebris nitela Guen.)

- Connecticut W. E. Britton (August 24): The stalk borer has been reported from Trumbull, Hamden, Higganum, Salem, South Britain, North Haven, and Pamfret. It attacks dahlias as well as corn.
- New York P. J. Chapman (July 25): From the number of specimens sent in and from observations made in various parts of the State, the common stalk borer appears to be much more common and injurious this season than last. It has been reported attacking numerous kinds of plants.
- Indiana J. J. Davis (July 30): The stalk borer continues as a common pest. The specimens now being received are noticeably larger and lack the conspicuous stripes of the younger larvae. Reports since July 20 have come from Pierceton, Ft. Wayne, Hartsville, Richmond, La Fayette, Boswell, Amboy, Logansport, and Liberty. While most of the reports indicate corn as the host, a few reports relate to tomato, beans, and hollyhock, etc.
- H. K. Riley (August 20): The stalk borer continues to be a common pest, the larvae sent in being almost full-grown. Reports have come in from several localities since August 1.
- Illinois W. P. Flint (July 19): From ten to fifteen letters concerning this insect have been received daily for the past month or six weeks. In several sections of the State, particularly the northcentral part, the insect is certainly considerably more abundant than usual. Examinations of the marginal rows of cornfields in central Illinois show a damage of from 2 to 20 per cent caused by this insect. In most cases only a small fraction of one per cent of the corn is injured in the center of the field. In some cases, however, where fields were quite grassy and weedy in the fall of 1926, damage by this insect would be found all over the field. The larvae are approaching maturity in the southern part of the State. (August 18): Specimens of this insect are still being received in considerable numbers, and from a very wide variety of plants. The larvae are practically full-grown at the present time, but no pupae have been found to date.
- South Dakota H. C. Severin (August 8): While the common stalk borer was probably unusually abundant this year, many of our inquiries are due to publicity of the European corn borer.
- Missouri K. C. Sullivan (July 29): The stalk borer has been unusually bad throughout the entire State. Its attack on growing corn has been

very noticeable and due to the fact that farmers are on the lookout for the European corn borer, we receive from one to twelve specimens almost every day.

braska M. H. Srenk (July 25-August 25): During the period covered by this report, the presence of the stalk borer in both field corn and sweet corn stalks has been very frequently reported. These reports have come from the same area as the complaints of injury mentioned in my last report. About 85 per cent of the complaints that have been received since July 25 have related to infestation of corn-stalks, the rest to miscellaneous thick-stemmed plants, including certain weeds such as sunflower and wild hemp. The specimens sent in during the past week have been mostly pupae rather than full-grown larvae as was previously the case.

#### BLISTER BEETLES (Meloidae)

eland J. A. Hyslop (August 28): Severely damaging Swiss chard in Montgomery County.

rgia R. M. Seeley (July 29): Blister beetles, especially Epicauta pennsylvanica DeG. and E. vittata Fab., have been unusually abundant.

iana H. K. Riley (August 20): Blister beetles were found feeding on dahlias at North Vernon, July 29, and on potatoes and tomatoes at Columbus, August 5.

bama J. M. Robinson (August 1): Blister beetles continue to be abundant.

#### MARGINED BLISTER BEETLE (Epicauta cinerea marginata Fab.)

rgia O. I. Snapp (August 11): These blister beetles are very abundant and doing considerable damage to tomatoes and Irish potatoes at Smarrs.

iana J. J. Davis (August 1): Blister beetle: All seen are margined blister beetles, reported damaging potato at Kempton, July 27, and during the past few days, damaging various vegetables and flower gardens.

#### WHITE GRUBS (Phyllophaga spp.)

o E. W. Mendenhall (August 5): There are many complaints of damage to strawberry plants by the white grubs this year, many strawberry beds being ruined.

uth  
akota H. C. Severin (August 3): Reports of damage by white grubs to strawberry over scattered areas have been reported.

TARNISHED PLANT BUG (Lygus pratensis L.)

New York

P. J. Chapman (July 30): Serious injury to susceptible crops has been reported from all parts of the State. It is likely that this pest is more common than last year.

WIREWORMS (Elateridae)

Idaho

C. Wakeland (July 29): As usual, during cool, moist springs, wireworms have been more destructive and have caused injury longer this season than on the average. They are a serious limiting factor in the production of corn, potatoes, and beans especially, in many localities, and are causing havoc generally in gardens.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Idaho

C. Wakeland (July 29): Two outbreaks of the Colorado potato beetle have been combated in southern Idaho this season. Outbreaks in 1924 and 1925 had been stamped out and the same methods employed then have been followed this season. The large commercial production areas of southern Idaho are free from this pest and all concerned are endeavoring to keep them so. Farmers, the State Department of Agriculture, and the University of Idaho are cooperating in the work. Experience leads us to believe that if we know of the infestation, soon enough we can stamp it out completely and keep southern Idaho free from potato bugs indefinitely. Investigations are being made to determine the source of infestation.

TOMATO WORM (Protoparce sexta Johan.)

Illinois

C. C. Compton (August 12): The tomato worm is more numerous than usual. No severe injury is being done because of the heavy growth of tomato vines this year. Parasites are noticeably absent.

LESSER BULB FLY (Eumeris strigatus Fallen)

Washington

R. L. Webster (August 3): Damage to a 4-acre potato field was reported by Elmer E. Osborn, Ferndale, to the Experiment Station at Pullman. I visited this field July 21 in company with C. F. Doucette, of the Bureau. In no case did we find any maggots in growing tubers, although numerous larvae were seen in the old rotting seed pieces. This field was located several miles from any commercial bulb plantings.

POTATO APHID (Illinoia solanifolii Ashm.)

New York

C. R. Crosby and assistants (July 15): On Long Island a number of important infestations have been found and control measures are



being applied. It seems likely that serious loss will result. Moderately serious infestations have been found in Orange and Ulster Counties.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

outh  
Dakota H. C. Severin (August 8): Injury by the potato leafhopper is usually severe over the State and this year is no exception.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

Ohio E. W. Mendenhall (August 18): The cabbage butterfly is very bad this year again and doing considerable damage to cabbage over the State.

Indiana H. K. Riley (August 20): Cabbage worms were reported from Indianapolis August 1.

Illinois C. C. Compton (August 10): The imported cabbage worm is now appearing in large numbers about three weeks later than usual in the Chicago trucking district.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Georgia R. M. Seeley (July 29): The harlequin bug is unusually abundant throughout the State and doing serious damage.

Missouri K. C. Sullivan (July 29): Many reports from the southern part of Missouri are being received for assistance with the harlequin bug which is unusually abundant at this time.

Alabama L. W. Brannon (August 12): This insect is continuing to be one of the worst pests in this district (Birmingham), and adults and nymphs are doing serious damage to collards, cabbage, and turnips.

Mississippi R. W. Harned (August 22): The harlequin bug continues to be quite serious on cabbage and collard plants in different sections of the State. On August 12 specimens of this insect were sent to us from Handsboro in Harrison County with the information that they had completely destroyed a crop of collards. Serious damage to collards was reported at Starkville on August 10, Booneville on August 7, and Crawford on August 19. Specimens collected on cabbage were received from Como on August 13.

CABBAGE LOOPER (Autographa brassicae Riley)

Mississippi R. W. Harned (August 22): Specimens that have been tentatively identified as the cabbage looper, Plusia brassicae, have been received from two localities in Yazoo County, one locality in Humph-

reys County, and one locality in Sharkey County. In each case they were collected on cotton. One moth was reared and definitely determined by Dr. Dyar as Plusia brassicae.

FALSE CHINCH BUG (Nysius ericae Schill.)

California A. C. Davis (August 1): The bugs seem to be confined to fields in which the weeds are still standing. Have detected them on cabbage plants only as yet, outside of weed fields. They occur in uncontrollable numbers.

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Kansas R. L. Parker (August 1): This insect undoubtedly has been infesting cabbage in this locality (Manhattan) for two or three years. It is the most serious pest for the growers at this time of the year.

TURNIP WEBWORM (Loxostege sp. ?)

Alabama J. M. Robinson (August 1): The turnip webworm is beginning to make its appearance in destructive numbers in Conecuh County, attacking collards and cabbage.

CABBAGE WEBWORM (Hellula undalis Fab.)

Mississippi R. W. Harned (August 22): Specimens of the cabbage webworm were received on August 13 from Como where they were reported as damaging cabbage plants.

CABBAGE APHID (Brevicoryne brassicae L.)

Nebraska M. H. Swenk (July 25-August 25): Reports of injury to early cabbage by the cabbage aphid came to hand during late July.

TURNIP APHID (Phopalosiphum pseudobrassicae Davis)

Nebraska M. H. Swenk (July 25-August 25): During early August reports of injury to early cabbage by the turnip aphid were received.

STRAWBERRY

STRAWBERRY LEAF ROLLER (Ancyliis comptana Frohl.)

Nebraska M. H. Swenk (July 25-August 25): The strawberry leaf roller was found doing damage in strawberry beds in Richardson County late in July.

Idaho C. Wakeland (July 29): The strawberry leaf roller is probably the most destructive pest of strawberries in Idaho. It occurs in all parts of southern Idaho and has caused complete loss in some fields of small area.

A GELECHIID MOTH (Anacamptis fragariella Busck)

California T. D. Urbahns (July 12): On July 12 C. K. Turner reported western strawberry leaf roller, Anacamptis fragariella, as destroying strawberry plants at Alta, Placer County.

STRAWBERRY CROWN BORER (Tyloderma fragariae Riley)

Nebraska M. H. Swenk (July 25-August 25): Strawberry beds in the vicinity of Scribner, Dodge County, were found badly injured by the strawberry crown borer during the second week in August.

STRAWBERRY WHITEFLY (Trialeurodes packardii Morrill)

North Carolina W. A. Thomas (August 10): Practically every strawberry field in this section (Chadbourn) shows a more or less heavy infestation of this insect. Few adults are present at this time, while many of the older leaves are clustered with developing young. The plants are showing no serious effects from the attack.

STRAWBERRY ROOT APHID (Aphis forbesi Weed)

Nebraska M. H. Swenk (July 25-August 25): The strawberry root aphid was reported damaging strawberry beds in the vicinity of Scribner, Dodge County, during the second week in August.

A WIREWORM (Monocrepidius bellus Say)

North Carolina J. N. Tenhet (August 13): This tiny click beetle is present in considerable numbers under dying strawberries. Strawberry plants are being killed by drought and attacks of Paria canella, and it is still undetermined whether or not Monocrepidius bellus is also attacking the strawberries.

TERMITES

North Carolina W. A. Thomas (August 22): This insect has been observed injuring strawberry plants in many fields in this section (Chadbourn) during the past month. The injury in most cases is confined to newly-cleared fields where more or less decaying wood particles are found.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

New York Rodney Cecil (August 4): The Mexican bean beetle is in New York State at North Collins and Gowanda. The infestation at North Collins is light but well established in a 15-acre field of refugee green pods. Larvae, pupae, and newly emerged adults were found.

N. F. Howard (August): The Mexican bean beetle has been found in the western part of the State.

Pennsylvania

N. F. Howard (August): The Mexican bean beetle has been found along the northern border and eastward to Tioga, Center, and Huntington Counties about half way across the State and along the southern border to Lancaster County.

J. N. Knull (August 2): The Mexican bean beetle was found in some of the northern and western counties when a survey was made.

Ohio

E. W. Mendenhall (August 6): The Mexican bean beetle is doing a lot of damage in Montgomery and Miami Counties. Many of the bean patches are riddled. (August 23): The Mexican bean beetle is very abundant in Licking County and is as far north as Knox County. The greatest destruction was done earlier in the season.

Indiana

J. J. Davis (August 1): Injury by the Mexican bean beetle has been unusually severe the past month. Reports come from Indianapolis and Richmond on the north and from Owen, Martin, and Dubois Counties on the west.

H. K. Riley (August 20): The Mexican bean beetle was reported from Ellettsville July 30.

North  
Carolina

R. W. Leiby (August 19): This insect is again being complained of after a quiet lapse of about five weeks during which time the hot weather may have held it in subjection.

R. W. Leiby and C. E. Brannon (August): The Mexican bean beetle has been reported from Duplin, Pitt, and Northham and several counties westward.

South  
Carolina

C. O. Eddy (August): The Mexican bean beetle has been reported from the following counties: Kershaw, Richland, Calhoun, and Lancaster.

Georgia

R. M. Seeley (July 29): The Mexican bean beetle has been doing very serious damage throughout the northern half of the State. The southern half of the State is apparently free from this beetle except an area of 10 miles around Thomasville in the extreme southern part of the State.

Alabama

J. M. Robinson (August 1): Mexican bean beetles are active in the valleys of northeastern Alabama.

L. W. Brannon (August 12): The Mexican bean beetle has been seriously damaging bush beans, pole beans, and pole lima beans in the vicinity of Birmingham. Beans planted in corn have been severely damaged and all stages of the insect were found in a field of soy beans which was near a patch of badly infested pole beans. In this



district I have seen several patches of pole lima beans which were completely defoliated. In badly infested fields, pupae and egg masses can be found on morning glory. Third-generation beetles emerged in the life-history cage's August 17.

Mississippi R. W. Harned (August 22): Reports have been received at this office in regard to serious damage to garden beans by the Mexican bean beetle in the northeastern corner of the State. Specimens have been received from Alcorn, Tishomingo, and Prentiss Counties.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

California T. D. Urbahns (July 18): On July 18, C. R. Sanburn reported cucumber beetles, Diabrotica soror, attacking beans in Marin County and reported loss in some cases as 20 per cent.

BEAN APHID (Aphis rumicis L.)

Nebraska M. H. Swenk (July 25-August 25): The bean aphid was reported as injurious to beans and nasturtiums from various parts of the State the second week in August.

LEAFHOPPERS (Jassidae)

Liana H. K. Riley (August 20): Leafhoppers have been reported damaging beans at Aurora August 6.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Ohio C. Wakeland (July 29): The seed corn maggot has caused the re-planting of many acres of beans in the commercial bean fields in the Twin Falls district. It has also caused some injury to the potato seed pieces in some fields. This insect appears to be of importance here only during springs of more than usual moisture and prolonged cool weather.

CUCUMBERS AND MELONS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Liana H. K. Riley (August 20): Cucumber beetles were reported as damaging cucumber vines at Roanoke August 8, and same report from Rockville, August 10.

Missouri C. C. Compton (August 2): The striped cucumber beetle was less destructive than usual this year. It appeared later in the season after the vines had made considerable growth.

Nebraska R. L. Parker (August 1): Diabrotica vittata has been reported as very abundant at Wamego, attacking cucumbers.

SQUASH LADYBIRD (Epilachna borealis Fab.)

North Carolina J. N. Tenhet (August 4): Melons completely defoliated near Chad-bourn but the crop was practically made before defoliation. Several acres observed to be infested.

PICKLE WORM (Diaphania nitidalis Stoll)

Indiana H. K. Riley (August 20): The pickle worm was reported as heavily infesting pickles at Logansport August 18.

Georgia R. M. Seeley (July 29): The pickle worm is very serious in northern Georgia.

Alabama J. M. Robinson (August 15): The pickle worm and cantaloupe caterpillars are very active and destructive at the present time.

Mississippi K. L. Gockerham (July 30): Late crops of cantaloupes, cucumber, and squash are very seriously attacked by this insect. So severe is the injury that it is almost impossible to secure a single sound fruit.

MELON APHID (Aphis gossypii Glov.)

Nebraska M. H. Swenk (July 25-August 25): The melon aphid was more than usually injurious to cucumbers and melons during the present summer, many complaints having been received during the period covered by this report.

Kansas R. L. Parker (August 1): The melon aphid was found attacking cucumbers at Miltonville.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Massachusetts A. I. Bourne (August 18): Squash bugs, from reports which have come in and from our own observations, appear to be considerably less abundant than last year.

Georgia R. M. Seeley (July 29): The squash bug is unusually numerous throughout Georgia, especially on melons.

Nebraska M. H. Swenk (July 25-August 25): At least the usual amount of injury by the squash bug was reported during late July and August.

SQUASH BORER (Melittia satyriniformis Hüb.)

Indiana J. J. Davis (August 1): The squash vine borer was reported injuring squash at South Bend July 25, and pumpkin at Muncie July 27.

H. K. Riley (August 20): The squash borer was reported attacking squash at Fort Wayne and Peru August 5.

braska M. H. Swenk (July 25-August 25): At least the usual amount of injury by the squash borer was reported during late July and August.

MELON APHID (Aphis gossypii Glov.)

Mississippi K. L. Cockerham (July 30): In a late crop of squash planted in our experimental plot, every hill was rather heavily infested with an aphid, probably the melon aphid. Earlier crops did not seem to be damaged so much by this insect.

ONIONS

ONION THRIPS (Thrips tabaci L.)

Ohio C. Wakeland (July 29): Commercial onion plantings and seed fields are very heavily infested and in some fields severe damage is being caused.

ONION MAGGOT (Hylemyia antiqua Meig.)

Illinois C. C. Compton (August 11): The second brood of onion maggots did not cause any commercial loss this year, largely because of the dry weather which is unfavorable to the development of the insect.

EGGPLANT

FLEA BEETLES (Halticinae)

Mississippi R. W. Harned (August 22): Eggplant plants that had undoubtedly been seriously injured by flea beetles, although none of these insects were present, were received from Pascagoula July 30.

EGGPLANT FLEA BEETLE (Epitrix fasciata Cr.)

Alabama L. W. Brannon (August 12): This species of flea beetle has been doing considerable damage to eggplants in this locality (Birmingham).

EGGPLANT LACE BUG (Gargaphia solani Hied.)

Mississippi R. W. Harned (August 22): Specimens of lace bugs that have been tentatively identified by J. M. Longston as Gargaphia solani on eggplant were received from Horn Lake July 28.

A WEEVIL (Anthonomus nigrinus Boh.)

Mississippi R. W. Harned (August 22): Early in June weevils were received from Marion with the following statement "They work on the tender buds of eggplants. Some of the buds are dropping." These weevils

were sent to Dr. L. O. Howard and were identified by W. S. Fisher as Anthonomus nigrinus. On August 1 weevils identified by Mr. Fisher as Anthonomus nigrinus were sent to us from Hattiesburg where they were reported as "knocking the blooms off late eggplants."

RED SPIDER (Tetranychus telarius L.)

Ohio E. W. Mendenhall (August 11): Eggplants in southwestern Ohio are quite badly infested with the red spider.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi M. R. Smith (August 1): R. P. Colmer sent to this office recently some eggplants which he stated had been seriously injured by the fire ant. These ants had tunneled out the stems of the plants and gnawed holes in the petioles of the leaves.

SWEET POTATO

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Mississippi K. L. Cockerham (July 30): This insect continues very numerous in sweet-potato fields around Biloxi. In walking across a field, great numbers of beetles fly out around one's feet. A few sweeps of a collecting net brings in hundreds of beetles. The foliage shows distinct feeding marks. Numerous other crops and weeds are also being attacked by this beetle.

SEMITROPICAL ARMYWORM (Prodenia eridania Cram.)

Mississippi R. W. Harned (August 22): Specimens of the semitropical armyworm were received on August 16 from Poplarville where they were reported as causing serious damage to sweet potato plants. Specimens of this species collected on cotton were received from Eden August 13. The determinations were made by S. E. Crumb of the Bureau of Entomology.

TURNIP

TURNIP APHID (Rhopalosiphum pseudo brassicae Davis)

Alabama L. W. Brannon (August 12): This species is doing considerable damage to turnips in this locality (Birmingham). I have seen several fields of turnips that were so seriously damaged that they were unmarketable.



PARSNIP

PARSNIP WEBWORM (Depressaria heracliana DeG.)

E. J. Hambleton (August 13): Injury by the parsnip webworm ran high in one planting of parsnips, which consisted of several acres.

J. J. Davis (July 19): The parsnip webworm was received from various parts of the State as possibly the European corn borer. It was always sent in from wild parsnip.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

R. W. Leiby (August 15): Damage is increasing throughout the cotton section. In the southern cotton counties from the coast to the middle Piedmont, the average infestation of squares appears to be about 40 per cent. In the upper Coastal Plain counties the average infestation is about 8 per cent, with a heavier infestation expected. (August 20): In the southern and eastern cotton counties infestation is generally complete. Elsewhere complete infestation should take place in another week. The entire top crop has been destroyed by the weevil, and the middle crop of bolls is threatened. There are more weevils now than at this time in any year since the weevil invaded the State.

C. O. Eddy (August 15): Weevil infestation is light and found only in scattered areas in the lower and middle Piedmont sections. No weevils have been reported in the extreme upper section of the State.

R. M. Seeley (July 29): There is the worst infestation of the boll weevil since 1923 throughout southern, middle, and northwestern Georgia.

O. I. Snapp (August 11): The boll-weevil infestation is greater now in middle Georgia than it has been for a number of years. It has ruined the top crop, and infested squares are falling rapidly. As a result the cotton crop is going to be short.

R. M. Seeley (August 29): The following is a report on the cotton boll weevil situation in the State of Georgia:

South of a line drawn through Troup, Meriwether, Spalding, Butts, Jasper, Putnam, Green, Taliaferro, and Lincoln Counties (the southern  $\frac{2}{3}$  of the State) damage is estimated to be 40-50 per cent, with a total loss in some areas. Hundreds of acres will

not be picked. Only a light bottom crop will be harvested. There has been no blooming in three or four weeks. Many bolls which now appear to be safe are in fact punctured. North of this line it is estimated the minimum infestation is 20 per cent. While there is a light infestation in all counties that grow cotton in this State the damage decreases as one advances northward from above line.

#### Arkansas

Dwight Isely (August 16): Boll weevils appear to be more abundant in the western portion of the State this year than in any year since 1923. There is more infestation on the hill farms in this portion of the State than I have ever seen. Our records for the eastern portion of the State are not so complete as usual, but apparently the boll weevil is not proportionately so serious as in the western portion.

#### Alabama

J. M. Robinson (August 1): Boll weevils are present rather generally in central and southern Alabama, in enormous numbers. (August 16): The boll weevil has become more numerous than in any previous year in central and southern Alabama. The top crop in the later cotton has been entirely removed by this pest. In some of the Piedmont region the entire crop has been practically destroyed, as there will not be more than 50 bolls of cotton to the acre. This is perhaps in a rather limited area. Of 6,489 squares counted on undusted plats 65 per cent were punctured.

#### Louisiana

B. R. Coad (August 8-13): The average infestation on 6 cuts of old cotton was 65.9 per cent. The infestation ranged from 56.6 to 75.0 per cent.

W. E. Hinds (August 20): Boll weevil infestation has been complete in many fields for at least 10 days and is rapidly reaching the condition of complete infestation in the majority of undusted fields. However, the infestation has been so "spotted" in the earlier part of the season that some fields are still making cotton.

#### Mississippi

R. W. Harned (July 25): Boll weevil condition compared with previous years.

	1925 July 25	1926 July 24	1927 July 23
Number of counties inspected.....	26	21	31
Number of farms inspected.....	101	135	108
Number of farms infested.....	81	111	86
Per cent of farms free of weevil.....	19.9	17.7	20.4

Highest infestation reported (per cent) .....	42	25	52
Average per cent infestation of infested farms .....	4.42	4.28	12.9
Average per cent infestation of all farms.....	3.55	3.53	10.2
Increase or decrease in weevil infestation preceding week.....	15	59	14
	(decrease)	(increase)	(decrease)

Mississippi State Plant Board (August 20): Boll weevils broke all previous records of the season during the past week with an average of 40 per cent of the squares punctured in the hill counties of the State, according to reports of the State Plant Board inspectors who examined 37 farms in 21 counties. This is a marked increase over the preceding week when the infestation averaged only 30 per cent, and that of 18 per cent two weeks ago.

F. C. Bishopp (August 1): (Telegram) Boll weevil not so injurious as the boll worm, but some fields moderately infested.  
(August 26): Boll weevil injury has greatly increased during this month. At the present time practically all squares are being punctured as put on, and many bolls even though fairly well matured, are being infested.

F. L. Thomas (August 20): The eastern section of the State has had far more boll weevil injury than usual, reports being received from 59 counties during the period August 1 to 15. The reports from two of these counties, which are in the western part of the State, have not been verified, viz. Dickens and Orion. There appears to be an area of 8 to 10 counties in central Texas where boll weevils have not been abundant except in the wooded sections. The crop in this area is a little better than average. Hot, dry weather has practically stopped growth.

#### COTTON FLEA HOPPER (Psallus seriatus Reut.)

R. W. Leiby (August 19): Adults are now commonly observed in cotton blooms. Their injuries appear to be confined to the tiny squares on the terminals of the stalks. Their present feeding may aid boll-weevil damage, the further development of squares forcing the weevil to attack partly grown bolls.

R. M. Seeley (July 29): There has been some damage in spot by the cotton flea hopper but not very serious.

J. M. Robinson (August 16): Cotton hopper adults are more abundant now than they have been at any period of the year. However, the cotton is so far advanced that no serious damage will result.

R. W. Harned (July 25): Cotton hoppers are reported in many fields but very few complaints of damage have been received to date.

Texas

F. C. Bishopp (August 1): Cotton heppers are destructive in a few fields.

F. L. Thomas (August 8): Cotton flea hopper reports continue to filter in, coming from 6 counties.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Arkansas

Dwight Isely (August 16): Leaf worms have been collected in Washington County and specimens have also been received from Lawrence County, in the northeast corner of the State, indicating that the species is fairly well distributed over Arkansas at present.

Louisiana

W. E. Hinds (August 20): Cotton leaf worms are reported as abundant in many fields in the northwestern part of the State and extending at least as far east as Monroe.

Alabama

J. H. Robinson (August 16): The cotton leaf worm has not shown up in any localities of the State.

Mississippi

R. W. Harned (August 22): The first specimens of the cotton leaf worm received from points in Mississippi during 1927 were collected on August 5 at Deeson in Bolivar County. A very light infestation was reported. Specimens have since been received from Lee, Washington, Desoto, Yazoo, Alcorn, Sharkey, and Tallahatchie Counties. In all cases a general light infestation was reported. In most cases the worms were beginning to "web-up." Another generation is expected at any time. Reports that we have received at this office indicate that generations are overlapping to a great extent. Reports from other places indicate that the infestations occur throughout the northern half of the State.

Texas

F. L. Thomas (August 20): Leaf worms have caused very little injury to date in the greater part of the State. Parasites have contributed greatly in holding the numbers in check. Have just returned from a trip to Lamar, Collin, and Hill Counties where many sections in each county were visited. Excepting one field in Hill County, I saw no place where there was even a threat of injury. Worms were first reported from Hill County over a month ago. Only 17 counties reported for the past two weeks period. These reports are from widely scattered sections: Hudspeth, Midland, Mitchell, Wilbarger, Hayes, Lavaca, Victoria, Stephens, Ellis, and a few others in the northeast.

F. C. Bishopp (August 26): On August 10 a few newly hatched leaf worms appeared in some fields in this county (Dallas). Toward the end of the month a number of farmers began poisoning their cotton against the insect. On August 26 many of the leaf worms in nonpoisoned fields are fully grown, and are spinning up. A small percentage has already pupated. The infestation has not become general, and while the fields most heavily infested are "ragged" considerably no material damage has been done by the first brood.



COTTON BOLL WORM (Heliothis obsoleta Fab.)

ama J. M. Robinson (August 1): The cotton boll worm is showing up in restricted areas with light infestations. (August 16): The cotton boll worm has shown up in various spots throughout the entire State. In some areas such as at Hartsells and Samson they have been reported as doing considerable damage.

siana W. E. Hinds (August 20): Boll worms are injurious to full-grown bolls.

s F. C. Bishopp (August 1): Telegram: Boll-worm damage to cotton in parts of Dallas and Collins Counties is about 5 to 10 per cent and there are prospects for a great increase.

F. L. Thomas (August 20): Boll worm injury is severe in many places, increasing in one field of this county (Drazos) from 10 to 26 per cent on 1,700 bolls during the period August 3 to 11. In Collin County 39 per cent of the bolls were injured and in Lamar County the average was 3.3 per cent with a maximum of 8 per cent.

F. C. Bishopp (August 26): Boll-worm injury has almost stopped in the cotton fields of northern Texas. Severe damage was done during the first half of the month, the crop on many fields being cut from 10 to 50 per cent. The injury, however, appears to have been more or less spotted.

COTTON APHID (Anhis gossypii Glov.)

h E. W. Dunnam (August 16): Cotton lice can be found in almost all clim cotton fields but are not causing serious damage.

ama J. M. Robinson (August 16): The cotton aphid was very abundant on dusted plots in early August but has been reduced to a minimum by the activity of hymenopterous insects, ladybird beetle larvae, and syrphid larvae. The principal ladybird is Hippodamia convergens Guer. However, Coccinella novemnotata Hbst. is more abundant than last year.

siana W. E. Hinds (August 20): Cotton plant lice have developed abundantly in some localities and particularly where poison for the boll weevil has been applied.

CABBAGE LOOPER (Autographa brassicae Riley)

issippi R. W. Harned (August 22): Specimens that have been tentatively identified as the cabbage looper, Flusia brassicae, have been received recently from two localities in Yazoo County, one locality in Humphreys County, and one in Sharkey County. In each case they were collected on cotton. One moth was reared and definitely determined by Dr. Dyar as Flusia brassicae.

FALL WEBWORM (Hyphantria cunea Drury)

Mississippi R. W. Harned (August 22): Larvae collected on cotton at Clarksdal in Coahoma County and in Rosedale County during the latter part of July were sent to Washington for definite determination. A letter from Dr. A. L. Quaintance states that Mr. C. Heinrich of the Bureau of Entomology tentatively identified these specimens as Hyphantria cunea, with the comment that the larvae were a trifle unusual. On August 22 more of these insects were received from Madison County where they were attacking cotton.

GARDEN WEBWORM (Loxostege similalis Guen.)

Mississippi R. W. Harned (August 22): Specimens of the garden webworm were received recently from four farms in Yazoo County where they were collected on cotton.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Alabama J. H. Robinson (August 16): The fall armyworm is appearing from grass in cornfields into the edge of some cotton fields and has devoured the cottonfoliage to the point, at least in one instance, where the farmer has become alarmed.

CUTWORMS (Noctuidae)

Louisiana W. E. Hinds (August 20): Late planted cotton is being damaged severely by cutworms and grassworms.

FLEA BEETLES (Halticinae)

Mississippi R. W. Harned (August 22): Blister beetles of the species Epicauta strigosa Gyll. and E. ferruginea Say were collected on cotton at Steens August 11, where they were reported doing considerable damage.

STRIPED FLEA BEETLE (Systema taeniata Say)

Georgia R. M. Seeley (July 29): The striped flea beetle was found doing serious damage to cotton through May and the first half of June, but has apparently disappeared from cotton since July 1.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Georgia O. I. Snapp (July 30): This insect is unusually abundant in this section this year. It has been attacking the blooms of cotton, feeding on the petals, and also in some cases on the little squares.

RED SPIDER (Tetranychus telarius L.)

North Carolina R. W. Leiby (August 18): The red spider has been present in sections of the State in such numbers that it will materially reduce

the yield of cotton. Fields have been seen recently where areas as large as 15 acres will hardly yield a third of a bale to the acre. In such instances the plants are now almost devoid of foliage

### TOBACCO

#### TOBACCO SUCKLEY (Diciphus minimus Uhler)

th  
relina  
R. W. Leiby (August 20): Moderate to severe injury by a mirid determined by C. S. Brimley as Diciphus minimus has been noted on tobacco in Edgecombe, Nash, and Wake Counties. Complaints of injury have also been received in the office. Tobacco leaves become spotted, pale, and lose their "body" as a result of extensive sucking of the sap by adults and immature stages.

### FOREST AND SHADE - TREE INSECTS

#### MISCELLANEOUS FEEDERS

#### WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

aware  
H. L. Dozier (July 18): The white-marked tussock moth is very abundant on shade trees, especially sycamore. On this date the majority were cocooning and parasites were extremely abundant. Pimpla infusitor Scop. P. annulipes Brulle, Chalcis ovata Say and several species of tachinid flies and hyperparasites were reared.

iana  
B. A. Porter (August 27): More tussock moth larvae have been noticed than usual, although they have not been sufficiently abundant in southern Indiana to cause conspicuous damage.

#### BAGWORM (Thyridopteryx ephemeraefformis Haw.)

aware  
H. L. Dozier (July 18): The common bagworm was present in large numbers feeding on shade trees, especially sycamore.

rgia  
R. M. Seeley (July 29): The bagworm has been unusually prevalent this year throughout Georgia, especially on arbovitae and cedars, but has also been reported attacking a rambler rose and a clematis vine.

o  
E. W. Mendenhall (August 2): Many of the shade trees such as Norway maple, sycamore, boxelder, elm, and others are badly infested by this pest in Dayton and vicinity. (August 19): The bagworm is getting worse each year in the towns and cities in southern Ohio. Many trees are defoliated by them.

iana  
H. K. Riley (August 20): Bagworms have been quite prevalent on ornamental trees this season. Recent reports are from West Point, Greensburg, Fairbanks, and Indianapolis.

B. A. Porter (August 27): Unusually abundant in southern Indiana. Numerous evergreens, boxelder, and other trees defoliated. Occasional young apple trees defoliated in young orchards which have received insufficient spraying.

Missouri . K. C. Sullivan (July 29): The common bagworm seems to be more widespread here than in the past, and is causing considerable damage shade and ornamental trees.

Nebraska H. H. Swenk (July 25-August 25): The bagworm has been reported more common than usual as attacking arborvitae and other evergreens in our extreme southeastern counties. During the first week in August two infestations were found at Lincoln, one in an orchard near the city and another on the evergreen ornamentals in a yard in the city. It rarely is found as far to the northwest in Nebraska as Lincoln.

Mississippi R. W. Harned (August 22): Specimens of the common bagworm on arborvitae were received from Corinth July 25, from Jackson July 30, and from Starkville July 30 and August 8. At all places they were reported as rather serious.

FALL WEBWORM (Hyphantria cunea Drury)

Connecticut W. E. Britton (August 24): The fall webworm is moderately abundant on shade trees and fruit trees at New Haven, Granby, Lyme, and Putnam.

RED SPIDER (Tetranychus telarius L.)

New Jersey R. B. Lott (August 10): Injury from the red spider unusually bad throughout the State, especially on juniper, spruce, and Thuya.

Ohio E. W. Mendenhall (July 23): In private plantings in several places in central and southern Ohio, I find the red spider mite attacking blue spruce. (August 19): The red spider mites have been unusually bad this summer, injuring arborvitae, spruce, ornamental plants of different kinds, and vegetables such as eggplant, etc.

Indiana J. J. Davis (August 1): The red spider damaged Norway spruce at Marion July 21.

EUROPEAN RED MITE (Paratetranychus pilosus C & F.)

New Jersey R. B. Lott (August 8): The European red mite is very abundant. The undersides of some limbs are so red with mites that they can be seen several yards distant.



OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

E. W. Mendenhall (August 2): I find that the oyster-shell scale is quite bad on the soft maple and elm trees in Dayton and vicinity.

H. K. Riley (August 20): The oyster-shell scale on ash was reported August 12 from Mishawaka.

TAMARISK SCALE (Chionaspis etruscae Leon.)

Arizona News Letter (July 31): The tamarisk scale was reported damaging trees in the city of Phoenix at two different localities. Efforts are being made by the city officials to distribute the ladybird beetle which is parasitic upon this scale, into all the districts of the city where the pest is known to exist.

FULLER'S ROSE BEETLE (Pantomerus fulleri Horn)

W. A. Thomas (August 20): This insect has recently appeared in considerable numbers in the forests of this section and is defoliating some of the smaller trees. The injury is especially severe on magnolia and bay. The attack on sumac is confined almost entirely to the developing bloom buds.

BEECH

WOOLLY BEECH APHID (Prociphilus imbricator Fitch.)

H. K. Riley (August 20): Woolly beech aphids were reported from Carmel August 13.

BIRCH

BIRCH LEAF MINER (Fernusa rumila Klug)

W. E. Britton (August 24): The birch leaf miner has been reported as in the usual abundance on birch at New Haven, Hamden, Sherman, Woodbury, Southbury, and Cranby.

BOXELDER

BOXWOOD LEAF ROLLER (Gracilaria negundella Cham.)

H. C. Severin (August 3): Gracilaria negundella Cham. is unusually abundant on boxelder.

CATALPA

CATALPA SEEMING (Ceratonia catalpae Boisd.)

J. A. Hyslop (August 23): Some defoliation in Montgomery County.

Ohio

E. W. Mendenhall (August 5): The first and only outbreak of the catalpa sphinx larvae is west of Dayton this year. Other years they have been very plentiful.

A DIPTEROUS LEAF MINER (Phytomyza sp.)

Ohio

E. W. Mendenhall (August 6): I find the leaf miner quite bad in the catalpa leaves in Bellefontaine, Logan County.

ELM

ELM LEAF BEETLE (Galerucella xanthomelana Schrank)

Connecticut

W. E. Britton (August 24): The elm leaf beetle is less in evidence than usual in New Haven.

Ohio

E. W. Mendenhall (August 12): I find that an outbreak of the elm leaf beetle, Galerucella luteola, in Piqua, according to records, is the farthest south it has been found in Ohio.

EUROPEAN ELM SCALE (Gossyparia spuria Modeer)

Ohio

E. W. Mendenhall (August 6): I find the European elm scale quite general on the elms in Dayton and vicinity.

HEMLOCK

HEMLOCK SPANWORM (Ellepia fiscellaria Guen.)

Wisconsin

A. A. Granovsky (August 17): Only a few larvae are now present in the State Park area in Door County as a result of dusting with calcium arsenate last year. Two were found in half a day's search. Considerable infestations occur at Bailey's Harbor, Jacksonport, Washington Island, and east of Sturgeon Bay, which were not treated, but the insects are not sufficiently numerous at those locations to be of economic importance.

Maine

J. V. Schaffner, Jr. (August 11): A woodlot of about 100 acres, 80 per cent hemlock, the rest birch, pine, spruce, and oak, has ~~been~~ practically completely stripped; feeding has been confined almost entirely to the hemlock. This report was received from one of our Quarantine inspectors.

LOCUST

LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

Connecticut

M. P. Zappe (August 11): Work of this insect is much more injurious in Windham County than usual. It is also more noticeable in other sections of the State.

A PLANT BUG (Orthotylus chlorionis Say)

Mississippi

R. W. Harned (August 22): Under date of April 7 we received from Harrison County some Miridae collected on honey locust with a note that the insects were "Destroying foliage. Tree almost entirely defoliated." We requested more specimens. On April 26 five adults were collected and sent to us with the statement, "Difficult to find any now."

Under date of April 29, the County Agent wrote, "Yesterday I examined the locust tree and found that practically all of the insects have disappeared and the foliage is beginning to come out fast." These insects have now been determined by W. L. McAtee as Orthotylus chlorionis.

ROSY HISPA (Anoplitus inequalis Web.)

Ohio

E. W. Mendenhall (August 8): The black locust throughout southern Ohio is affected by rosy hispa which is doing considerable damage.

LOCUST TWIG BORER (Ecdytolopha insiticiaria Zell.)

Missouri

A. C. Burrill (July 24): Ecdytolopha insiticiaria Zell. is on some shade trees of honey locust in Jefferson City. This gall lepidopteron has slowly increased during the past four years until many branches are much distorted.

MAPLE

COTTONY MAPLE SCALE (Fulvinarina innumerabilis Rathv.)

Ohio

E. W. Mendenhall (August 23): The cottony maple scale is very bad on maple in W. Vernon and Newark.

Illinois

W. P. Flint (July 19): This scale is unusually abundant in east central and northern Illinois. Eggs have been hatching in this section during the last two weeks.

GLOOMY SCALE (Chrysomphalus tenebriosus Comst.)

Ohio

E. W. Mendenhall (August 15): I found an outbreak of the gloomy scale on soft-maple trees in one of the nurseries in Montgomery County.

FLAT-HEADED APPLE TREE BORER' (Chrysobothris fenerata Oliv.)

Indiana

J. J. Davis (August 1): The flat-headed apple tree borers were reported injurious to maples at Indianapolis July 20.

OAK

CHAIN-SPOTTED GEOMETER (Cingilia catenaria Drury):

Massachusetts  
Hampshire  
J. V. Schaffner, Jr. (August 17): A report received August 5 that 50 acres of sprout growth was being defoliated at Amherst. The insect causing the damage has been identified as Cingilia catenaria Drury. Feeding confined principally to oak, sweet fern, and huckleberry.

PINE

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Ohio  
E. W. Mendenhall (August 6): I find the pine leaf scale quite abundant on pine and spruce in some nurseries about Dayton.

WOOLLY PINE SCALE (Pseudophilippa quintancii Ckll.)

Ohio  
E. W. Mendenhall (August 6): There were a few cases of the woolly pine scale in some of the nurseries about Dayton this season. It is known locally as "bleeding pitch" and "pitch pine wool."

SYCAMORE

SADDLE-BACK CATERPILLAR (Sibine stimulea Clem.)

Indiana  
H. K. Riley (August 20): Saddle-back caterpillars were found feeding on sycamore at Westport August 12.

SYCAMORE LACE BUG (Corythuca ciliata Say)

Mississippi  
K. L. Cockerham (August 16): Sycamore trees at several residences were inspected and found to be heavily infested with a lace bug. The leaves have been turned a dull brown from the attack of these insects. The owners stated that this is the most serious outbreak that they have ever seen on sycamore.

R. W. Harned (August 22): Specimens of lace bugs that have been identified by J. H. Langston as Corythuca ciliata on sycamore from Gulfport August 3.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Indiana  
J. J. Davis (August 1): The walnut worm, Datana integerrima, was common on walnut the past week at Bedford and Vincennes.



WEBWORM (Crambus spp.)

iana J. J. Davis (August 11): Webworms are abundant in walnut and other timber trees at Bedford.

GREENHOUSE AND ORNAMENTAL PLANTS

MISCELLANEOUS FEEDERS

TIP MOTH (Rhyacionia frustrana Comst.)

rgia R. M. Seeley (July 29): The pine tip moth has been found attacking ornamental pines near Atlanta.

A WASP (Chorion ichneumoneum L.)

iana H. K. Riley (August 20): A wasp, Chorion ichneumoneum, was reported working in flower beds at Fort Wayne August 8.

SNAILS (Mollusca)

o E. W. Mendenhall (July 15): The begonias in the greenhouses in Springfield are attacked by the snails and considerable injury is done.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea F. Loew)

issippi R. W. Harned (August 22): Specimens of the chrysanthemum midge were received from Greenville August 12, where they were collected on chrysanthemum.

GREENHOUSE LEAF-TYER (Phlyctenia rubigalis Guen.)

o E. W. Mendenhall (August 23): There are quite a good many greenhouse leaf tyers on the chrysanthemum in the greenhouses in Newark.

issippi R. W. Harned (August 22): Chrysanthemum leaves that had evidently been injured by the greenhouse leaf tyer were received from Ridgeland in Hinds County during the first week in August.

A FLEA BEETLE (Systena elongata Fab.)

issippi R. W. Harned (August 22): Flea beetles identified by J. H. Langston as Systena elongata were collected on chrysanthemum plants at Corinth July 28.

CREPE MYRTLE

STRAWBERRY FLEA BEETLE (Haltica litigata Fall)

Mississippi R. W. Harned (August 22): Specimens identified as Haltica litigata were found injuring crepe myrtle at Pascagoula August 1.

AN APHID (Myzocallis sp.)

Mississippi R. W. Harned (August 22): Among the aphids that have been received and identified by A. L. Hamner is Myzocallis sp., collected on crepe myrtle at Ridgeland and Gulfport on August 8.

DAHLIA

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Ohio E. W. Mendenhall (August 19): The 12-spotted cucumber beetle has done some damage to dahlias this year in Miami County.

GOLDENGLOW

CHRYSANTHEMUM LACE BUG (Corythuca marmorata Uhl.)

Mississippi R. W. Harned (August 22): Specimens of lace bugs that have been tentatively identified by J. M. Langston as Corythuca marmorata were taken on goldenglow from Pascagoula on August 4.

IRIS

IRIS BORER (Macronoctua onusta Grote)

Michigan E. I. McDaniel (August 16): Last week we obtained some iris roots containing the iris borer. This is, I believe, the first record for Michigan. We placed these in cages in order to breed out the iris borer and today fifty or so adults of the lesser bulb fly, Eumeris strigatus, are in the cages. We were, of course, prepared for the later event, on finding larvae of this pest in the dirt and in the decaying bulbs. This makes the first record for the lesser bulb fly also.

PASSION FLOWER

GULF COAST FRITILLARY (Dione vanillae L.)

Mississippi M. R. Smith (August 23): Passion flower vines in the neighborhood of the Biology Building at the A. & M. College have been considerably defoliated by caterpillars of the Gulf Coast fritillary. Many of the chrysalids are hanging from a coping on the building 30 feet from the ground.

TAXUS

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

Connecticut M. P. Zappe (August 10): Larvae have caused considerable injury to roots of Taxus, and adults were emerging on the above date. Some feeding by adults on leaves of Taxus, but little real injury is caused by larvae.

ROSE

AN APHID (Myzaphis rosarum Kalt.)

Ohio E. W. Mendenhall (August 22): The green rose aphid is quite bad, as usual, on hybrid tea roses. They infest the new growth and destroy the buds.

ROSE STEM SAWFLY (Adirus trimaculatus Say)

Ohio E. W. Mendenhall (August 18): The rose stem borer was found in Columbus this summer doing some damage to rose plants.

ROSE SCALE (Aulacaspis rosae Bouche)

Ohio E. W. Mendenhall (August 6): I find in private plantings quite often that the rose scale is quite bad.

VERBENA

MARGUERITE LEAF MINER (Phytomyza chrysanthemi Kowarz)

Mississippi R. W. Harned (August 22): The marguerite fly, Phytomyza chrysanthemi, was collected on verbena plants at Como July 23.

WOODBINE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Nebraska H. H. Swenk (July 25-August 25): Injury by the grape leafhopper to woodbine leaves continued to be reported during the period covered by this report.

A CHRYSOMELID BEETLE (Rhabdopterus picipes Oliv.)

New York H. E. Buckman (July 28): The evidence of the feeding of Rhabdopterus picipes on Virginia creeper leaves is fairly common.

I N S E C T S A T T A C K I N G M A N A N D

D O M E S T I C A N I M A L S

MAN

HOUSE FLY (Musca domestica L.)

Texas F. C. Bishopp (August 26): House flies appear to be unusually abundant about dairies for this time of year.

BEDBUG (Cimex lectularius L.)

Indiana H. K. Riley (August 20): Bedbugs were found in Fort Wayne August 12.

FLEAS (Siphonaptera)

Indiana H. K. Riley (August 20): An infestation of fleas was reported from Culver August 9.

Georgia K. C. Sullivan (July 29): Fleas are coming in for their publicity, and bad infestations in barns and outbuildings are being reported very frequently.

STRAW ITCH MITE (Pediculoides ventricosus Newport)

Mississippi R. W. Harned ( August 22): Two reports have been received recently in regard to severe irritation to the skin of people who are working with cowpeas. It is our opinion that this irritation has been caused by the predacious mite Pediculoides ventricosus that attacks the cowpea weevil and the 4-spotted weevil. The reports came to us from correspondents at Lucy, Tenn. and Kendrick, Miss. At the same time the correspondent from Kendrick sent us some specimens of the 4-spotted bean weevil, Bruchus Quadrimaculatus Fab.

CHIGGERS (Trombicula irritans Riley)

Texas F. C. Bishopp (August 26): Chiggers have continued to annoy people in this section (Dallas) throughout the summer. They are more numerous this August than normal.

WOOD TICKS

General statement F. C. Bishopp (August): A number of cases of tularaemia have been reported from Arkansas, Louisiana, Tennessee, and Texas during the summer. A number of these cases have been attributed to the bites of wood ticks, presumably Dermacentor variabilis and Amblyomma americanum.



INSECTS

HORSES

BLACK HORSE FLY (Tabanus atratus Fab.)

Ohio

E. W. Mendenhall (August 6): The mourning horse fly is quite common in the southern part of the State and quite annoying to stock.

STABLE FLY (Stomoxys calcitrans L.)

Texas

F. C. Bishopp (August): The abundance of this livestock pest has varied considerably in different sections of northern Texas. Reports from Denton County indicate serious annoyance from the fly. In this section farmers have complained of the flies being so numerous as to render the working of mules and horses in the fields difficult. This rather heavy abundance appears to extend northward into Cook and Grayson Counties. Dairymen in the vicinity of Dallas report much less trouble from this fly this season than usual.

CATTLE

HORN FLY (Haematobia irritans L.)

Texas

F. C. Bishopp (August 25): Horn flies have been present in about the usual numbers this month. On this date the number per animal ranged from 75 to 700 up to 250 to 2,000.

SCREW WORM (Cochliomyia macellaria Fab.)

Texas

F. C. Bishopp (August 26): Screw worms have continued to cause losses among all classes of stock throughout August, though the number of cases has greatly decreased from that of July. Shearing of goats and sheep has begun in southwestern Texas, and most ranchmen are endeavoring to reduce the number of shear cuts so as to avoid screw worm injury as far as possible. The trapping of screw worm flies has continued in the sections where this was begun systematically in the spring. But the number of flies captured has decreased during August. Screw-Worm cases have been reported to be more numerous than usual during this season in eastern Texas as well as in the range country of southwestern Texas.

SHEEP

A SAND FLY (Culicoides variipennis Coq.)

Texas

F. C. Bishopp (August 6): This sand fly is causing some annoyance to livestock, especially sheep, and also to men working in the

bottom lands close to the creeks where the insects breed. In general the number of these gnats has been less than last year, probably owing to more frequent flooding of the streams.

HONEYBEES

WAX MOTH (Galleria mellonella L.)

Nebraska

H. H. Srenk (July 25-August 25): An unusual number of reports of infestations of colonies of honeybees with the wax moth were received during August.

INSECTS INFESTING HOUSES AND  
PREMISES

TERMITES

Missouri

K. C. Sullivan (July 29): We are receiving an unusually large number of inquiries regarding termites. These inquiries are coming from all sections of the State and considerable damage is being done to dwellings and similar buildings.

A. C. Burrill (August 2): In several drug stores Reticulitermes flavipes has attacked the wood-work, including timbers in show cases, wooden backs of several drawers of drugs, and the wooden floor of an alcove where drugs are stored. Rest of room finished in tile and reenforced cement construction, brick front. This pest has also attacked furniture crates and old boxes in an old barn.

ANTS (Formicidae)

Mississippi

H. R. Smith (August 1): One of our correspondents at Bay Springs sent us a number of specimens of the small sugar ant, Prenolepis (Mylanderia) sp. which she claimed had been giving trouble in her house for the past two years. Mr. Horace Gladney, one of our inspectors, reports that he found a sill of a house at Ocean Springs thoroughly tunnelled by an ant which has been identified by the writer as Camponotus caryae subsp. rasilis Wheeler. This species, which normally nests in galls and limbs of trees has been taken a number of times from houses in this State. Its habits are very similar to those of the carpenter ant.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi

H. R. Smith (August 1): The writer observed a nuptial flight of the fire ant taking place at 4 p.m. The day had been clear and very warm up to the time of the flight. While workers, males, and females of this ant were swarming over the ground in large numbers a very small fly was observed to hover above the ants and to occasionally dart at the workers. As many as four or five of the flies

were seen at one time. When a fly struck a worker ant it would fall over on one side and act as if it had lost its equilibrium. After remaining in this position for a few seconds the ant would get up and run away, apparently as briskly as ever. None of the flies were seen to attack the male or female ants. It is highly probable that this is the phorid fly Pseudacteon crawfordii Coq. which was originally described from Texas.

PHARAOH'S ANT (Monomorium pharaonis L.)

Mississippi

H. R. Smith (August 1): A correspondent who lives several miles from Biloxi sent in for identification a number of Pharaoh's ants. She stated that the house was only two years old, yet the ants were overrunning it.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Texas

F. C. Bishopp (August 1): Telegram: Argentine ant reported for the first time in Temple.

POWDER POST BEETLES (Lyctus spp.)

Indiana

H. K. Riley (August 20): The powder post beetles were reported damaging hickory timber at Russellville August 4.

CARPET BEETLE (Anthrenus scrophulariae L.) •

Indiana

J. J. Davis (August 1): Carpet beetles were reported damaging furniture at Ossian July 25.

CLOTHES MOTHS (Tinea pellionella L. and  
(Tineola biselliella Hum.)

Indiana

J. J. Davis (August 1): Clothes moths were abundant at Columbia City.

SILVERFISH (Lepisma sp.)

Indiana

J. J. Davis (August 1): Silverfish was reported damaging rugs at Tappanee July 25.

H. K. Riley (August 20): Silverfish were found in a clothes closet at Monon August 16.





THE INSECT PEST SURVEY  
BULLETIN

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AND  
THE STATE ENTOMOLOGICAL  
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## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR SEPTEMBER, 1927

A serious white-grub infestation is reported from the East Central States from western Indiana to eastern Nebraska and Kansas.

The first serious outbreak of the fall armyworm since 1920 is under way in eastern Kansas and Oklahoma. Minor outbreaks have been reported from Indiana, Mississippi, and Alabama.

The Mexican fly situation has not changed materially since our last report. A recent survey in Nebraska shows that the situation is not particularly menacing, while, on the other hand, in south-central Kansas there is every indication of serious trouble from this pest. It was discovered for the first time in Sedgewick County, Colorado, where, in individual cases, damage amounted to approximately 10 per cent of the crop.

The alfalfa weevil has very slightly extended its area of infestation in Colorado this year.

A report of Fuller's rose beetle attacking soybeans in North Carolina is the first record of this insect as a pest to a field crop.

The first record this season of damage to fruit by adults of the cotton leaf worm was received on September 13 from Kansas. The late date and the locality make it evident that but little serious trouble is to be anticipated from this pest in the fruit belt.

Unusually serious damage by the apple maggot is recorded this season from the East Central States extending from Massachusetts to Virginia.

The oriental fruit moth has been very destructive throughout the most of the infested territory. It has been reported from Delaware County, Ohio, and is still spreading in Georgia. Very heavy devastation of the second brood is recorded from Connecticut.

One Japanese beetle was collected during September at Ferryville, Cecil County, Maryland, which is outside of the previously known infested area.

No specimens of the Mexican fruit worm have yet been found in grapefruit crop of 1927-28. The last one discovered was a June 8 larva from fruit of the previous season.

According to the most recent survey, the territory covered by the Mexican bean beetle now occupies the entire East Central and Middle Atlantic

region, excepting the Coastal plain. The northern limit reached by this pest is southern Ontario, Canada, Monroe County in the southeast corner of Michigan and Erie, Wyoming, and Livingston Counties in the westernmost corner of New York State. It extends thence southward across the center of Pennsylvania, eastward as far as Tioga, Center, and Huntingdon Counties, and still farther eastward along the southern border of the State to Lancaster County, thence across the east-central part of Maryland from Harford County to Frederick County, continuing southward across Virginia through Fairfax, Alexandria, Albemarle, and Pittsylvania Counties into North Carolina, in which State it extends decidedly more to the eastward, being recorded from as far east as Northam, Pitt, and Duplin Counties. In Georgia, the pest remains in the northern half of the State with the single exception of the territory around Thomasville on the southwestern border. To the westward the insect has made but little advance. In Alabama the territory has extended but very slightly to the south and the Mississippi territory has remained practically the same as last year. In Kentucky and Tennessee it has moved about one or two tiers of counties westward, while in Indiana similar slight westward movements are recorded, the insect still being some distance from the Illinois State line.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR SEPTEMBER, 1927

The European corn borer has extended its range considerably in northern Ontario and southern Quebec. In Ontario, larval collections have been taken in the counties of Algoma, Sudbury, Mississauga, Parry Sound, Muskoka, St. Joseph's Island, and Manitoulin Island; and in Quebec, in the counties of Pontiac, Hull, Papineau, Argenteuil, Two Mountains, L'Assomption, Veillon, Jacques Cartier, Laval, Beauharnois, Repulseville, Missisquoi, and Champlain all south of latitude 47. The most northerly point in Canada at which the corn borer has been found is north of latitude 47 at Haileybury, in the county of Timiskaming, Ontario.

A recent survey has revealed a marked reduction in the extent of infestation of the wheat stem sawfly in south-western Manitoba. The average infestation was found to be about 8 per cent, resulting in an actual loss of less than 1 per cent. In Saskatchewan, damage by this insect is undoubtedly much less than in 1926, although considerable losses have been reported from the Swift Current district in the southwestern portion of the province.

Collections of the sweet clover leaf-miner, Parectopa albicostella Braun, indicate a general distribution of this insect throughout southwestern Manitoba.

Observations made in the Peace River Block, British Columbia, reveal that the grasshoppers which have been a serious pest in this area for a number of years were completely wiped out this season by heavy spring rains which fell shortly after the grasshoppers had hatched. Grasshoppers caused serious damage to clover and the foliage of young apple trees in the Iberville and Hiramford districts, southern Quebec.



The striped June beetle, Polyphylla decemlineata Say, which feeds on the roots of many cultivated plants, is reported as present in dry sandy soils in most of the farming areas of southeastern British Columbia, where it appears to be on the increase.

The yellow-necked caterpillar caused serious defoliation of apple trees at points in the Okanagan Valley, British Columbia, and in southern Quebec.

The apple leaf-roller, Alloponyma vicarialis Zell., occurred in severe outbreak form in Nova Scotia this summer, from Michelle west to Digby, some orchards being completely skeletonized by second-brood larvae.

A very serious outbreak of pear psylla has been experienced in sections of the Niagara district, Ontario.

The European red mite appeared in outbreak form in southern Ontario, quite late in the season, affecting plum, apple, and other orchard trees.

The spruce budworm has greatly enlarged its area of attack in the Thor Lake district, Ontario, north of Lake Huron and the Georgian Bay. A very severe infestation is reported from Gorganda on the north and east, to Smoothwater Lake on the south, and as far west as the east branch of the Spanish River, an area of more than 4,500 square miles.

The European leaf-mining sawfly, Fenusa pumila Aug., has been found seriously attacking gray birch in certain sections of Nova Scotia.

Outbreaks of the hemlock looper occurred in several sections of Ontario. The infested areas occurred along the St. Lawrence River from Brockville as far east as Gananoque, and in extensive areas in the Muskoka and Parry Sound districts.

The tortricid Sparganothis pettitana Rob. has completely defoliated many maples all over Cape Breton Island.

The maple leaf-miner, Gracilaria negundella Chamb., caused much damage to boxelder throughout Saskatchewan.

The horse bot fly, Gastrophilus intestinalis DeG., is very abundant in Saskatchewan, seriously affecting horses.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- Ohio E. T. Mendenhall (September 19): Grasshoppers are quite numerous in central and southern Ohio, and are doing considerable damage to nursery stock fruit and shrubbery.
- Illinois W. F. Flint (September 19): Grasshopper damage has been very light over the entire State this year. Only a few scattered cases of injury have occurred. The species noticed in fields have been Melanoplus atlantis and M. differentialis.
- Kansas J. W. McColloch (September 21): Injury to fall sown alfalfa was reported from Council Grove, Burlingame, and Paxico.

WHITE GRUBS (Phyllophaga spp.)

- Indiana J. J. Davis (September 24): White grubs were abundant in the northwestern quarter of the State, damage occurring to golf greens, lawns, strawberries, and corn.
- Nebraska H. H. Swenk (August 25-September 25): Complaints of injury by white grubs have been received from all over the southern and eastern portions of the State. These reports relate chiefly to strawberries, potatoes, truck patches, privet hedges, and hay meadows.
- Kansas J. W. McColloch (September 7): The white grub, Phyllophaga lanceolata, Say, is reported very abundant in some wheat fields in Harper and Reno Counties. (September 15): White grubs have injured lawns at Portis and Hugaton, and a strawberry bed has been killed at Stockton.
- Utah G. F. Knowlton (September 3): White grubs have been found damaging sugar beets in only a few instances this summer.

CEREAL AND FORAGE - CROP INSECTS

MISCELLANEOUS FEEDERS

FALL ARMYWORM (Laphygma frugiperda S. & A.)

- Indiana J. J. Davis (September 24): The fall armyworm was destructive to corn at Aurora September 16.
- Illinois W. F. Flint (September 19): There have been several cases of damage by this insect to summer sown alfalfa. A moderately heavy flight of the moths occurred during the first and second weeks in September. Larvae received September 13 were nearly full-grown. Adults of this species are always taken in bait traps from March to October.

nsas

R. C. Smith (August 28-September 7): There is a heavy outbreak of the fall armyworm over the entire eastern half of the State. Alfalfa, volunteer wheat, and bent grass being attacked, and farms seriously injured at Manhattan and Wichita. We are watching the outbreak closely and expect little damage to alfalfa because of the abundance of grass. Tachnic parasites, from 31 to 60 per cent were observed. The last outbreaks were in 1911 and 1920.

J. W. McColloch (September 19): There has been a general outbreak of the fall armyworm in the State during the past month. The first report was received on August 31 from Wichita and new reports are still coming in. Bermuda and bent grass have been injured at Wichita, Salina, Caldwell, Dodge City, and Gypsum. Damage to alfalfa was reported from Allen, Woodson, Cherokee, Harvey, and Bourbon Counties. Corn was injured at Altamont. Volunteer wheat has been subject to attack everywhere. (September 25): Recent reports of injury by the fall armyworm have been received from Cherryvale, Coffeyville, Teosho Falls, and White City.

lahoma

A. F. Caudell (September 20): In Payne County, near Perkins, I found alfalfa being very decidedly injured by the larvae of what Dr. Dyer determined as Lophyrus frugiperda. Most of the larvae appeared to be about half to two-thirds grown.

abama

H. L. Cockerham (August 26): A field of five or six acres of sweet potatoes was being severely defoliated by a caterpillar, which I think is the fall grassworm.

ssissippi

R. W. Harrell (September 22): Only two complaints have been received recently in regard to the southern grassworm. One of these complaints was in regard to injury to cotton at Island on August 18, and the other was in regard to injury to corn at Bogal on August 27.

#### WHEAT

#### HESSIAN FLY (Phytophaga destructor Say)

linois

A. P. Flint (September 19): During the first part of September there was a moderate emergence of Hessian fly. Examination of early sown wheat made on September 17, showed a moderate number of eggs newly hatched and half-grown maggots on the plants. Emergence is still taking place.

braska

H. H. Soren (August 25-September 25): According to a survey made during August, there was no serious or commercial damage to the 1926-27 winter wheat crop in Nebraska by the Hessian fly. In several counties, notably Cass, Colfax, Hamilton, Jefferson, Johnson, Otoe, and Saunders, there were a greater or less number

of fields in which the fly worked in the wheat to a noticeable extent in the spring of 1927, but no appreciable damage was done except possibly in Cass and Johnson Counties where a few fields were sown too early in the fall of 1926 or that had an infested stand of volunteer wheat that was left to help form a crop showed some damage this spring. In no part of Nebraska was Hessian fly damage severe or conspicuous during the past year. It was not difficult, however, in certain localities to find stubble of the 1926-27 winter wheat crop with 7 or 8 out of 100 culms infested with puparia of the fly, and several counties revealed quite a plentiful sprinkling of the fly in the volunteer wheat in August. In some cases the volunteer wheat showed as high as 76 per cent infestation, with from 1 to 4 puparia to the plant. Taken on the whole, the present situation is not highly menacing, but nevertheless, it is not assumed that security from Hessian fly injury to the next wheat crop is assured if conditions for the development of the fly are favorable this fall and next spring. On September 20 about 95 per cent of the fly larvae in the volunteer wheat had transformed into puparia.

#### Kansas

J. W. McColloch (September 19): The past summer has been very favorable for the Hessian fly. Preliminary surveys show that maggots and flaxseed are very abundant on volunteer wheat in the south-central part of the State. The area of infestation has spread somewhat since harvest. Abundant rainfall throughout the summer has produced a heavy growth of volunteer wheat, much of which is infested, and it will be difficult to destroy this volunteer crop before seeding time. (September 21): A very heavy infestation of the fly occurs in volunteer wheat around Enterprise. Practically every stalk is infested. About half of the maggots are full-grown and transforming to the flaxseed stage. Wheat which was heavily infested with flaxseed was received from Dighton.

#### Colorado

C. P. Gillette (September 8): This insect was discovered for the first time in Colorado during wheat harvest this year. It has been definitely located in Sedgwick County only, where the injury on certain farms approximated 10 per cent.

#### FALSE WIREWORM (Eleodes suturalis Say)

#### Kansas

J. W. McColloch (September 21): Larvae of this species were received from Kinsley where they were collected in wheat ground.

#### CORN

#### EUROPEAN CORN BORER (Pyrausta nubilalis L<sup>hn.</sup>)

#### General statement

Corn-Borer Control, Extension Service, Report No. 17 (September 17) Scouting along the edge of the infested area is still adding new townships to the infested region. It is well to remember that in this new territory the infestation is very light; a township is



added to the list if but one borer is found. Several townships have already been scouted along the western shore of Lake Michigan with no sign of a borer. Isolated points in Illinois and western Indiana have also been scouted with negative results, so that the western limits of this year's infestation have been roughly established.

CORN EAR WORM (Heliothis obsoleta Fab.)

North  
Carolina

W. A. Thomas (August 31): The corn ear worm is unusually abundant on late corn this season and is doing serious damage in some fields. One field was observed on the above date where every ear showed the work of this insect. In some cases the ear had been almost completely severed from the stalk, causing the grain to fail to develop. In others, the larvae had eaten furrows through the developing grain throughout the entire length of the ear.

Nebraska

M. H. Srenk (August 25-September 25): The third brood of the corn ear worm was about normally injurious during the period covered by this report.

SOUTHERN CORN STALK BORER (Diatraea zeaecolella Dyar)

Kansas

J. W. McColloch (September 19): Larvae of this stalk borer have been received from a number of localities in the State during the past month. This pest is either increasing in Kansas or else farmers are finding it because of their interest in the European corn borer.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Mississippi

R. W. Harred (September 22): A correspondent at Yazoo City sent in on September 2, specimens of the lesser corn stalk borer with the report that these insects were causing 25 per cent injury to his cornfield.

STALK BORER (Papaipema nebris nitela Guen.)

Nebraska

M. H. Srenk (August 25-September 25): Specimens of the stalk borer coming in during the period covered by this report have all been pupae. Relatively very few such specimens have been received since August 25.

ARMYWORM (Cirphis unipuncta Haw.)

Indiana

J. J. Davis (September 24): The armyworm was reported attacking corn at Crown Point on July 18.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Kansas

J. W. Mc Colloch (September 1): Injury to corn by this insect is reported from Hunkato.

CORN ROOT WORM (Diabrotica longicornis Say)

To

G. F. Ainslie (September 7): Very little injury from this pest has been observed or reported this season, but the adults were unusually numerous during the late summer, feeding on sunflower goldenrod, and other late blooming flowers.

Nebraska

M. H. Swenk (August 25-September 25): Inquiries regarding the destructive work of the western corn root worm that took place during the past August, and specimens of the resulting injured corn roots, were still being sent in by the middle of September.

Kansas

J. W. McColloch (August 25): More than 50 per cent of the corn plants on a 15-acre field have gone down due to the injury by the western corn root worm.

A CORN ROOT WORM (Diabrotica virgifera Lec.)

Colorado

C. F. Gillette (September 8): Whether or not this beetle is more injurious in the State than it has been in former years, we are each year receiving more complaints of its depredations where corn is grown. If corn is grown for two or three years in succession, the loss is often heavy, sometimes almost total. The insect is generally distributed over the agricultural area east of the foothills.

CORN ROOT APHID (Anuraphis maidi-radicis Forbes)

Kansas

J. W. McColloch (August 14): This aphid destroyed 15 acres of corn at Lebo.

DIFFERENTIAL GRASSHOPPER (Melanoplus differentialis Thos.)

Mississippi

R. T. Harned (September 22): The blades of corn have been stripped from several acres of corn in a field near Maldon by grasshoppers of the species Melanoplus differentialis Thos.

CORN-FEEDING SIRPHUS FLY (Mesogramma polita Say)

Kansas

J. W. McColloch (September 15): The maggots of this syrphid have been very abundant on corn and sorghum in the State this year. Forty or fifty maggots can be found on a single stem of sudan grass.

TERMITES

Michigan

R. H. Pettit (September 27): During the last few days samples of corn stalks hollowed out by white ants have been coming in from Montcalm County. These corn stalks were standing in the field and have been attacked, as indicated by the letters, by the Termites, with the result that large cavities have been excavated in the stalks. As this is rather an unusual occurrence in Michi-

gan, and as there is considerable danger of the introduction of Termites into buildings, through the utilization of the corn stalks, I am notifying the farmers of the situation and advising against the carriage of such stalks into farm buildings.

ALFALFA

ALFALFA WEEVIL (*Phytonomus posticus* Gyll.)

Colorado

C. P. Gillette (September 8): J. H. Newton who is giving special attention to the control of this insect reports very slight extension of the infested area this year. The injuries from the weevil have not been severe except on a very few farms.

BLACK CUTWORM (*Agrotis ypsilon* Rott.)

Illinois

W. F. Flint (September 19): In one instance the black cutworm destroyed a field of alfalfa which was sown in August.

POTATO LEAFHOPPER (*Eumecurus fabae* Harr.)

Kansas

R. C. Smith (September 6): This insect was very abundant during August. Severe damage shown by cage rearing, but field damage not distinguished between that done by other leafhoppers and root diseases. It is the chief unusual alfalfa insect of the season; being more abundant than in recent years.

A PYRALID MOTH (*Nomophila noctuella* D. & S.)

Maryland

L. H. Cory (September 13): Destruction to portions of a newly seeded field of alfalfa is reported, possibly one-fifth of all areas considered. Larvae and pupae were collected September 10, and adults emerged September 12. Some parasites are present but have not yet emerged.

SOYBEAN AND COWPEAS

GREEN CLOVER WORM (*Plathypena scabra* Fab.)

North  
Carolina

J. H. Tenhet (September 2): The green clover worm is unusually abundant on soybeans and cowpeas this summer and doing considerable damage.

GREEN STINK BUG (*Acrosternum hilaris* Say)

Indiana

J. J. Davis (September 24): The green soldier bug was reported September 24 as common in some localities in southern Indiana. In Bartholomew County, there is good evidence that they have been responsible for shriveling of soybean seeds in the pod.

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

North  
Carolina

J. W. Toniet (September 1): Although damage to soybeans is negligible, this infestation is interesting as the first known occurrence of this insect on cultivated crops. Fuller's rose beetle is unusually abundant in this locality this year, and is defoliating holly and sweet bay everywhere.

SORGHUM:

CHINCH BUG (Blissus leucopterus Say)

Kansas

J. W. McColloch (September 19): The excessive rainfall this summer checked the chinch bug outbreak in the State. Only one report of damage has been received since the first of August. At Jotmore some injury was reported August 15 to late sorghum which was being grown as a feed crop.

CORN EAR WORM (Heliothis obsoleta Fab.)

Kansas

J. W. McColloch (September 13): The corn ear worm is injuring the heads of kafir at Cimarron.

DECIDUOUS - FRUIT INSECTS

MISCELLANEOUS FEEDERS

JAPANESE BEETLE (Popillia japonica Newm.)

Maryland

L. B. Smith (September 25): One Japanese beetle was collected during September at Ferryville, Cecil County, which is outside of the previously known infested area. A hearing has been called for October 5 at which the extension of the Quarantine to the new area will be considered.

General  
statement

Monthly News Letter of the Bureau of Entomology, No. 160 (August, 1927): Tiphia popillivora, an imported parasite of the Japanese beetle, which was recovered for the first time last season, has made excellent progress during the present season. It has now been recovered from three of the four original liberation and is abundant over an area of more than three square miles. At the center of the colony it has been destroying as many as 25 Japanese beetle larvae per square yard of ground. Without seriously depleting the "mother" colony, enough material has been collected for nine new colonizations widely scattered over the heavily infested area.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Michigan

R. H. Pettit (September 27): A note of interest is the finding of



the San Jose scale on four trees which are reported as being badly encrusted at Charlevoix. This records the occurrence of the scale the farthest north in Michigan. The report was made by L. R. Taft, East Jordan, Michigan.

Colorado

C. P. Gillette (September 8): This insect is only known to occur in parts of Mesa and Delta Counties. In the latter county only in two or three orchards. We have been able to keep this pest in control by prompt quarantine measures and by the uprooting and burning of trees that were not promptly cared for by the owner.

#### APPLE

##### APPLE APHID (Aphis pomi DeG.)

Utah

G. F. Knowlton (September 3): The green apple aphid was rather abundant in northern Utah during 1927, though no serious damage was reported.

##### ROSY APPLE APHID (Anuraphis roseus Baker)

Colorado

C. P. Gillette (September 8): This aphid, which has become rather generally distributed in the orchards of Delta and Mesa Counties, was of very little importance as a pest this year.

##### WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

New York

L. P. Felt (September 24): Woolly aphids, probably Eriosoma lanigerum was not so abundant as usual in Rochester (R. L. Horsey).

##### CODLING MOTH (Carpocapsa pomonella L.)

Colorado

C. P. Gillette (September 8): This insect has been extremely destructive to apple and pear crops in the State this year, the most serious losses being sustained in the Colorado Valley of the western slope. The poor control secured through the use of arsenical sprays makes one wonder if we have bred up a variety of this pest that is quite immune to arsenical poisons.

##### APPLE AND THORN SKELETONIZER (Homarophila pariana Clerck)

Connecticut

J. E. Britton (September 25): This insect is slightly more abundant than usual on apple at New Haven. Adults are now resting upon the screens of houses.

New York

L. P. Felt (September 24): The apple and thorn skeletonizer is very numerous in an apple orchard near Genesee Valley Park (R. L. Horsey). This insect appears to be generally established in the southern and western part of the State. In some localities it is exceedingly abundant on unsprayed trees.

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

Indiana J. J. Davis (September 24): The yellow-necked caterpillar was reported from Bargersville as abundant on apple the latter part of August.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Kansas J. T. McColloch (September 13): The moths of the cottonleaf worm are reported puncturing apples at Osage City.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

Massachusetts A. I. Bourne (September 26): The railroad worm has been general abundant. It has proven to be fully as abundant as during 1926, but not so bad as the previous year. Early varieties were found to be pretty badly riddled by the maggots. Wealthies, where properly sprayed, have apparently come through successfully, and as far as we can tell at present, the late or main season varieties are not seriously affected. (September 29): Following up the report I sent you a few days ago, I would say that later data coming in during the last two or three days, particularly from the eastern part of the State, lead us to believe that injury by the apple maggot is more serious than was at first believed. Some McIntosh which are being harvested show considerable presence of the maggots.

Connecticut Philip Garman (September 24): The apple maggot is apparently more abundant than usual on apples in New Haven County.

New York E. P. Felt (September 24): The apple maggot is becoming quite injurious to prunes in the Albany section. It has been troublesome for several years and this season 100 per cent of the fruit was infested in some orchards.

Virginia R. G. Levering (September 17): We have a tree of good apples that we call Cabin apples that were harvested three or more weeks ago. We put them in the cellar to get mellow, and I think something like 75 per cent of them were infested with maggots. We have found them in several other kinds of apples, including Grim golden and Magnum bonum, but not to such an extent as in the Cabin apples. I think that we have never been bothered with this pest until this year.

LEAFHOPPERS (Jassidae)

Massachusetts A. I. Bourne (September 26): We have found, particularly in the eastern part of the State, an abundance of late leafhoppers on apples. They have been found in some orchards in great abundance causing in some cases considerable annoyance to the pickers.

APPLE LEAFHOPPER (Empoasca mali Loeb.)

Connecticut

Philip Gorman (September 24): This insect is causing considerable mottling of the leaves of apple trees in New Haven and Hartford Counties; damage is hard to estimate. It is apparently more abundant than usual.

North  
Carolina

T. P. Metcalf (September 9): This pest has done a high percentage of injury throughout the apple-growing region of the mountains and is much more abundant than at any time during the past 20 years.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

Ohio

E. W. Mendenhall (September 9): The apple curculio has done a great deal of damage to the apple crop this year.

TERMITES

Kansas

J. H. McColloch (September 19): Termites are reported injuring apple trees and asters at Concordia.

PEACH

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

Connecticut

Philip Gorman (September 24): This pest has now been present for three consecutive years in some orchards, doing great damage each year. It has decreased in some sections and increased in others. It is estimated that 50 per cent of the second-brood larvae were parasitized in the orchard where the parasite Macrocentrus susilivora Roh. was most abundant.

Georgia

O. I. Sharp (September 20): The oriental peach moth continues to spread in Georgia, and has caused damage in some orchards, especially adjoining or near apple orchards which furnish a host for the late generations. During recent weeks it has been found near Hartsville, at Woodland, Barnesville, Woodbury, and Knoxville. At Knoxville, it was found to be much worse than the curculio. It had destroyed around 50 bushels of late peaches.

Ohio

E. W. Mendenhall (September 13): The oriental peach moth is found in Delaware County this year and reported quite bad on peach throughout southern Ohio.

PEACH BORER (Agrobia exitiosa Say)

Georgia

O. I. Sharp (September 20): The peach-borer infestation is heavier than normally in Fort Valley. Dealers report heavy buying of paratichloroethylene, and indications are that more of it will be used this fall than for several years.

PLUM CURCULIO (Conotrachelus nenuphar Host.)

Pennsylvania

E. M. Dozier (September 1): Peach growers in the Bridgeville section of the State have suffered enormous losses this year from wormy peaches. An investigation yesterday indicated that the major portion of this damage is due to late curculio. Apparently there have been two broods of this insect in that section this year.

BLACKBERRY

BLACKBERRY PSYLLID (Trioza tripunctata Fitch)

Maryland

E. H. Cory (September 13): This insect has been reported as attacking blackberry at Lough Heights. This is a new record. It is also recorded from Petersburg, Dorchester County.

PERSIMMON

FOREST TENT CATERPILLAR (Melacosoma disstris Hbn.)

North Carolina

E. P. Metcalf (September 9): This insect seems to be very general on persimmon trees. Practically every tree is infested. Many trees have 20 to 30 feet completely defoliated. This pest was bad last year but is much worse this year.

GRAPE

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Delaware

E. M. Dozier (September 1): Work of the second brood of the grape berry moth is beginning to show up very badly on several properties in the Dover section. By this date 50 per cent of the berries on 14 acres of vineyard appear to be injured by the worms, which seem to be about a week old.

LEATHOPPERS (Jassidae)

Ohio

E. F. Lindenhall (September 27): I find these active little insects quite numerous on grape leaves but they do not seem to do any appreciable damage.

SIX-SPOTTED GRAPE BEETLE (Polidnota punctata L.)

New York

E. F. Felt (September 24): Adults of the spotted grape vine beetle were unusually numerous in late summer on grape vines in the vicinity of New York City, two, three, or even four or five being noticed upon individual vines.



CURRENTS

IMPORTED CURRANT WORM (Pteronus ribesii Scop.)

Colorado C. P. Gillette (September 8): This is a comparatively recent arrival but it has become established in many of the gardens of northern Colorado, and has become rather serious where control measures have not been used.

FIGS

THREE-LINED FIG BORER ( Ptychodes trilineatus L.)

Mississippi R. W. Harned (September 22): Specimens of the three-lined fig borer were recently received from Gulfport, where they were reported as causing injury to fig trees.

PECAN

PECAN LEAF CASE BEARER (Acrobasis nebulella Riley)

Mississippi R. W. Harned (September 22): Acrobasis nebulella was collected on pecan at Brookhaven August 30.

A PHYLLOXERA (Phylloxera notabilis Perg.)

Mississippi R. W. Harned (September 22): Phylloxera notabilis was collected on pecan at Newton August 20.

PECAN BUD-MOTH (Proteopteryx bolliana Sling.)

Mississippi R. W. Harned (September 22): Proteopteryx bolliana was collected on pecan at Columbus on August 23 and at Brookhaven on August 30.

CITRUS

CITRUS MEALYBUG (Peridococcus citri Risso)

California Monthly News Letter of the Los Angeles County Hort. Comm. (September 15): During the fiscal year ending June 30, 1927, the Los Angeles County Insectary propagated and distributed over the mealybug infested orchards of the county approximately 4,000,000 adult Cryptolaemus, the ladybird beetle being used in the control of this pest, according to the report of H. E. Armistage, Deputy Horticultural Commissioner, in charge of this work. A total of 753 properties representing 7,000 acres of citrus but containing an actual infested acreage of 4,775 acres was covered using ten adult beetles per tree. Careful inspections made early in the spring to determine the degree of infestation over the known infested acreage and to locate such natural spread as occurred during the preceding months and again in midsummer to deter-

Since the progress of control resulting from liberations of *Cryptolaemus* and to locate any infestations requiring additional attention, showed 13,338 acres to be infested or 23 per cent of the total citrus acreage in the county, an increase of only 4 per cent over the preceding year. The inspections show the infestation of the coastal citrus areas representing approximately 12,000 acres to be 70 per cent complete while the interior or foothill sections including the San Fernando Valley, representing approximately 43,000 acres show only 6 per cent infested. As a result of the spring inspection, infestations throughout the county were graded 82 per cent light, 13 per cent medium, and 5 per cent heavy. Under normal field conditions it is necessary to liberate on only a small percentage of the light infestations and both medium and heavy infestations can be checked with liberated *Cryptolaemus* with only nominal injury to the property from the attack of the mealybug. Unfortunately, field conditions were such this season that while they permitted the normal development of the mealybug, the prolonged cool, damp weather materially delayed the activity of the *Cryptolaemus*. In fact, to such an extent that in spite of a laboratory production of *Cryptolaemus*, permitting the complete coverage of all infested properties requiring it, during the normally optimum period of April, May, and June, more or less injury resulted to the present crop. The injury was evidenced in the form of small sizes, "smutty" fruit and a drop of mature valencias in the heavier infestations. Black scale and orange tortrix, however, have been serious contributing factors to these losses this season so that it would be difficult to estimate the direct loss resulting from the attack of the mealybug. The *Cryptolaemus* have made up in part for their spring delay by a late season activity which is resulting in satisfactory seasonal control. In fact, infestations are at a minimum at the present time and present liberations of *Cryptolaemus* are being confined to those properties where necessary control measures for other insect pests in the orchards have interfered with the completion of mealybug control from the initial liberations.

#### MEXICAN FRUIT WORM (*Anastrepha ludens* Loew)

Texas

S. B. Fracker (September 27): No specimens of this insect have yet been found in the grapefruit crop of 1927-28. The last one discovered was on June 23 in some late fruit of the previous season.

#### TRUCK - CROP INSECTS

##### MISCELLANEOUS FEEDERS

#### BLACK BLISTER BEETLE (*Epicauta pennsylvanica* DeG.)

Ohio

E. W. Mendenhall (September 16): These blister beetles are quite troublesome in several of the counties in central and southern Ohio attacking asters and gladiolus.

MARGINED BLISTER BEETLE (Epicauta cinerea marginata Fab.)

Mississippi

R. W. Harned (September 21): Epicauta marginata was reported as causing injury to clematis at Oxford on August 18, to eggplant at Hattiesburg August 30, and to Boston ivy at Meridian on September 17.

POTATO

COLORADO POTATO BEETLE (Lepidotarsa decemlineata Say)

Colorado

C. F. Gillette (September 3): This old time potato pest has done very little damage to the crop this year. We seldom have reports of serious damage from it any more except in limited areas.

POTATO FLEA BEETLE (Epidrix cucumeris Harr.)

Colorado

C. F. Gillette (September 3): The potato flea beetle continued to be a major pest on potatoes in the Greeley section, and has been rather more abundant than usual this year. It does not seem to be a pest on the western slope as yet.

A HOLE CRICKET (Gryllotalpa borealis Burm.)

Indiana

J. J. Davis (September 24): Hole crickets, Gryllotalpa borealis Burm. were reported damaging potatoes at Vincennes September 12.

CABBAGE

CABBAGE WORM (Pontia rapae L.)

Massachusetts

A. I. Bourne (September 26): Cabbage worms are normally abundant as evidenced by the condition in the field at the present time.

Indiana

J. J. Davis (September 24): Common cabbage worms were reported abundant from a number of localities in the northern half of the State during the first half of September.

CABBAGE MOTH (Pieris brassicae Bouché)

Colorado

C. F. Gillette (September 3): This insect has recently increased in numbers, and it has been injurious to cabbage and cauliflower in some of the garden sections of the western slope.

CABBAGE BEET (Urosalpinx histrionica Hbst.)

North  
Carolina

T. A. Thomas (August 25): This insect has been unusually abundant on collards for the past month and in many fields near Chatham the plants were almost completely destroyed. In one field,

50 adults were collected from a single plant. No field so far observed in this section has escaped the ravages of this pest. The general average of the damage will exceed 50 per cent of the crop. A few egg parasites have been observed, but no percentage of parasitism has yet been determined.

Indiana

J. W. McColloch (August 24): The harlequin bug caused some injury to gardens at Emporia.

Mississippi

R. W. Harned (September 22): Recently adults of the harlequin bug were noted feeding on the buds, base of the flowers, and pods of clover in a garden at Starkville.

#### CABBAGE WEBWORM (Hellula undalis Fab.)

North  
Carolina

J. H. Tennet (September 2): In one garden in Chadbourn about one-half an acre of collards and cabbage is 100 per cent infested and practically all plants are dying.

Mississippi

R. W. Harned (September 22): Serious damage to collards and cabbage was reported on September 16 from Horn Lake, by specimens identified by J. H. Langston as the cabbage webworm. This species was also reported as injuring turnips at Fulton on September 8.

#### STRAWBERRY

##### A GROUND BEETLE (Haropus pennsylvanicus DeG.)

Colorado

C. P. Gillette (September 8): Geo. L. List found this insect destructive to a few strawberry beds in the vicinity of Fort Collins during the past summer. In at least two instances, the injury was so severe that the crops were a complete failure.

#### ASPARAGUS

##### ASPARAGUS FLITE (Crioceris asparagi L.)

Colorado

C. P. Gillette (September 8): This insect, which was introduced several years ago into Boulder County, has now spread as far north as Fort Collins and south to Denver. During the past summer it has attracted the attention of asparagus growers about Denver, and in some cases was seriously destructive to the asparagus plants.

#### BEANS

##### MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

New York

H. F. Howard (September 19): The Mexican bean beetle has been found in Ulster County.

Maryland

E. H. Cary (September 13): The Mexican bean beetle has been recorded from Harford County.



- Virginia W. S. Abbot (September 16): This insect was first found at Vienna September 9, but ~~must~~ have been working for some time. Also found at Fairfax.
- Indiana N. F. Howard (September 3): This insect was reported from Daviess and Warrick Counties.
- J. J. Davis (September 24): Mexican bean beetles were reported destructive in southern part of Hamilton County September 17.
- Kentucky N. F. Howard (September 3-5): The Mexican bean beetle has been found in Henderson, Trigg, and Marshall Counties.
- Nebraska H. E. Swenk (August 25-September 25): Probably the most important entomological event in Nebraska during the period covered by this report was the discovery, late in August, that the Mexican bean beetle had arrived in Scottsbluff County, evidently following down the North Platte Valley from Wyoming.
- Tennessee N. F. Howard (September 6-7): The Mexican bean beetle has been found in Henry, Carroll, Henderson, Chester, and McNary Counties.
- Mississippi R. W. Harned (September 22): Specimens of the Mexican bean beetle were received from Booneville August 25, and from Belmont September 3. Reports indicated that these insects were causing serious damage to garden beans.
- Colorado C. P. Gillette (September 8): This beetle continues to extend its area in the bean-growing sections and especially on the western slope. It has now become very destructive in most of the bean-growing sections of Mesa and Delta Counties, and has done considerable damage to the beans in lower Arkansas Valley during the past summer. It is also reported as causing very heavy losses to the bean crop in the vicinity of Weldona, Morgan County. It is the first time it has been reported as a serious pest in this section of the State.

#### CUCUMBERS AND MELONS

##### STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

- Colorado C. P. Gillette (September 8): This insect has spread to nearly all of the cucumber and melon growing sections east of the continental divide, but has never been a real pest outside of the lower Arkansas Valley in the State, where it has been only moderately abundant during the past summer.

##### MELON APHID (Aphis gossypii Glov.)

- Colorado C. P. Gillette (September 8): This is another pest that has distributed itself over the melon-growing sections of the eastern

slope in Colorado, but I have never had it reported as a pest in any of the garden areas of the western slope in this State. It has been only moderately abundant on cucumbers and melons this year.

PICKLE WORM (Diaphania nitidalis Stoll)

Indiana

J. J. Davis (September 24): The pickle worm was destructive to cucumbers at Princeton according to a report received September 12.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Nebraska

H. H. Srenk (August 25-September 25): Injury by the squash bug continued to be increasingly complained of during late August and early September.

ONION

ONION MAGGOT (Hydomyia antiqua Meig.)

Colorado

C. P. Gillette (September 3): This species, like the cabbage maggot, has also been rather rapidly on the increase in the onion-growing sections of the State during the last few years. It has also spread to some of the garden sections of the western slope.

ONION THRIPS (Thrips tabaci L.)

Massachusetts

A. I. Bourne (September 25): Onion thrips throughout the Connecticut Valley region this past season caused only a light to moderate infestation. While this represented a considerable advance over the condition in 1926, when the pest was remarkably scarce, yet compared with the condition during the period of the last ten years, the present season's abundance would be just about one-half normal infestation.

BEET

BEET ROOT APHID (Pemphigus betae Doane)

Colorado

C. P. Gillette (September 8): The losses due to this aphid are uniform from year to year, as it is generally distributed throughout the sugarbeet-growing area of the State. The losses sustained, while seldom severe, are in aggregate rather heavy. The almost complete elimination of the narrow-leaved cottonwoods on the farms of the beet-growing sections, has apparently reduced the losses to some extent.

ZEBRA CATERPILLAR (amestra picta Harr.)

Nevada

G. G. Schwois (September 14): These insects have apparently mi-

grated from burdock to beets. Earlier in the year they were reported from Fernley on alfalfa. No serious damage reported.

### SWISS CHARD

#### SPOTTED BEET WEBWORM (Hymenia perspectalis Hubn.)

Alabama

L. W. Brannon (August 29): Moths of this species were seen flying about in a patch of Swiss chard on July 1. Five moths were caught that day. The first larva of this species was found in the field on June 27 so the moths appeared sooner than first noticed. On July 8 the first pupa was found and on July 12 all stages of larvae were plentiful. First generation moths started appearing in the field on July 18. First generation moths that emerged August 9 are still alive. Second generation larvae are now pupating and second generation moths will probably be out in about 10 days. Larvae of this species are not doing so much damage this season as they did last year.

### SWEET POTATO

#### A TORTOISE BEETLE (Metritone bivittata Say)

Mississippi

R. W. Harned (September 22): Tortoise beetles, Metritone bivittata, were collected in a sweet-potato field at Natchez on August 22: were reported as causing considerable injury.

#### SWEET-POTATO FLEA BEETLE (Chaetocnema confinis Or.)

Alabama

K. L. Cockerham (August 29): These flea beetles were abundant in a sweet-potato field at St. Elmo and were apparently doing considerable damage.

#### SEMITROPICAL ARMYWORM (Prodenia eridania Cram.)

Mississippi

R. W. Harned (September 22): Specimens of the semitropical armyworm Xylomyges eridania have been received recently from Fruitland Park and Natchez. Serious injury to sweet-potatoes was reported from both places.

### EGGPLANT

#### EGGPLANT LACEBUG (Gargaphia solanii Heid.)

Mississippi

R. W. Harned (September 22): Specimens of the eggplant lacebug were collected from eggplants at Halstead on September 14.

### TURNIPS

#### CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Ohio

E. W. Mendenhall (August 26): quite a little damage was reported

from Columbus, and to the south, of the cabbage maggot injuring turnips and making them unsalable.

## SOUTHERN - FIELD CROP INSECTS

### COTTON

#### BOLL WEEVIL (Anthonomus grandis Boh.)

- Georgia O. I. Snapp (September 17): The drought during the last month has materially reduced the boll-weevil infestation. Some counties in middle Georgia have produced a good crop of cotton.
- Louisiana W. E. Hinds (September 23): Boll-weevil damage in the main cotton areas has been quite heavy, but many fields in the southern part of the State, where cotton growing is scattered and new, have practically escaped weevil damage this season. The late-planted cotton is suffering much from weevils and yield prospects are very poor.

#### COTTON LEAF WORM (Alabama argillacea Hbn.)

- Washington, D.C. F. C. Bishopp (September 28): A few moths of Alabama argillacea have recently been observed flying around lights in Washington, D. C.
- Arkansas F. C. Bishopp (September 11): Leaf-worm attack on cotton along the highway from Texarkana to Sikeston, Mo., is very spotted. Very little complete defoliation was observed, and many fields showed no apparent infestation. Some poisoning has been done, but it is not general.
- Mississippi R. W. Harned (September 22): Although the cotton leaf worm has appeared quite generally over the State during the past few weeks, the damage it has caused has been slight. We have received specimens collected on cotton from several localities.
- Louisiana W. E. Hinds (September 23): Cotton leaf worms have not increased so rapidly or spread so generally in Louisiana this season as seemed likely to occur two months ago. The principal damage has been in the northern part of the State and considerable poisoning has been done for their control.
- Texas F. C. Bishopp (September 5): Very little complete defoliation of cotton by the leaf worm has taken place in northern Texas. Some fields show no evidence of the presence of worms, but many are "ragged" considerably.

- Mexico A. W. Morrill (September 16): The first specimen of the season



in the Yaqui Valley, a full-grown worm, was found on August 2. Since then to date, gradually increasing numbers, but only a few acres out of a total of 3,000 have shown noticeable leaf injury. Crop injury held to an inappreciable amount by use of calcium arsenate and with aid of an undetermined hymenopterous parasite.

BOLL WORM (Heliothis obsoleta Fab.)

Oklahoma

A. W. Caudell (September 20): In Payne County, near the village of Coyle, I saw a field of cotton in which almost every boll was eaten by the cotton worm, then most all emerged, and scarcely a square could be found without either a larva or a pupa of the boll weevil in it, usually a larva. So complete was this infestation that it was predicted that the cotton would not be worth picking.

Mexico

A. W. Morrill (September 19): Boll worm damage to cotton in the Yaqui Valley covered a period of about four weeks beginning the middle of July. Damage ranged from 5 to 20 per cent of bolls destroyed by worms as shown by examination of 200 bolls each in eight localities. Boll worm damage was negligible by September 1. Increase to 3 or 4 per cent in one 200-acre field examined September 13. Eggs were numerous on silk of corn trap plants, 5-10 per cent.

SALT-MARSH CATERPILLAR (Estigmene acreae Drury)

Mexico

A. W. Morrill (September 15): The salt-marsh caterpillar was present in the Yaqui Valley practically from the beginning of the season. By the first of September an average of one full-grown worm per plant observed in limited areas, but fortunately owing to rank growth of plants in those areas no appreciable damage was done. In one field of 100 acres infestation is believed to have been beneficial.

COTTON SQUARE DAUBER (Lygus elisus Van D.)

Mexico

A. W. Morrill (September 15): This mirid bug first observed damaging cotton in the Yaqui Valley in 1925 proved very destructive in one field of 400 acres in 1927. This field is producing approximately one bale per acre, but damage to young bolls estimated to be 45 per cent in late July and August, retarded a yield of at least one and one-half bales per acre. In other fields in the Yaqui Valley the damage averaged 5 per cent of the bolls destroyed. By September 15 the insect had practically disappeared.

A TINGIDID (Gargaphia iridescons Champ.)

Mexico

A. W. Morrill (September 20): This insect heavily infested and checked the growth of cotton in some fields in the Yaqui Valley

early in the season when plants were less than 8 inches high. A common weed (undetermined) in the Yaqui Valley is the natural food-plant here, and damage to cotton was confined to fields where this was abundant. In all fields cotton finally developed so much faster than the tingsids multiplied that there was no apparent effect from the attack. On the whole, it is evident from this season's experience that with reasonably clean cultivation no appreciable damage need be feared from this insect.

FALL WEBWORM: (Hyphantria cunea Drury)

Mississippi

A. W. Harned (September 22): Specimens of the fall webworm collected on cotton have recently been received from two localities in Bolivar County, and on locality in Madison County. In all cases the correspondents reported these insects as abundant in one or two spots in their cotton fields.

COTTON BUCCULATRIX (Bucculatrix gossypiella Morrill)

Mexico

A. L. Morrill (September 16): The first specimens for the season in the Yaqui Valley were discovered July 25. On August 1, 20 leaves picked at random were examined showing 12 damaged by tunnelling of larvae at outer end of petioles, at junction with leaf blades. Green boll infestation was very rare at that time. By September 15, 20 leaves from the same locality, approximately the same cotton rows, showed 100 per cent damaged at ends of petioles, the average number of worm tunnels being much greater than 6 weeks earlier. Green bolls show an average of about 5 or 6 spots indicating larvae working in carpels or emerging therefrom. Damage inappreciable to first picking of three-fourths of a bale per acre in a field planted April 15. Later setting of bolls appear to be damaged to the extent of at least 10 per cent.

COTTON APHIS (Aphis gossypii Glov.)

Mississippi

A. W. Harned (September 22): A. L. Hamner observed a cotton field at McCool on September 9 that showed a heavy infestation of the cotton aphid. This particular field had been dusted with calcium arsenate five times in order to control the boll weevil. The cotton was young and had a fairly good bloom on the date examined.

BEAN THRIPS (Heliethrips fasciatus Perg.)

Mexico

A. W. Morrill (September 19): Severe damage in the Yaqui Valley in areas up to 10 acres became conspicuous about August 20, especially noticeably in fields where peas had been grown during preceding winter and spring. In such fields many volunteer pea plants appeared with the young cotton and soon became generally infested with thrips. The peas died during the extremely hot, dry weather in May and June, forcing the thrips to the cotton.

Several heavy rains between August 20 and September 20 reduced the thrips to negligible numbers.

### SUGARCANE

#### SUGARCANE BORER (*Diatraea saccharalis* Fab.)

Louisiana

W. E. Hinds (September 23): The sugarcane borer has multiplied rapidly during the third and fourth generations. The egg parasite, Trichogramma minutum, has helped greatly to check a devastating attack by the borer. Laboratory propagation of Trichogramma has been conducted on the eggs of Sitotroga cerealella at Baton Rouge during the current season and will be increased during the winter with the expectation of colonizing these parasites on Diatraea eggs in corn or cane fields at the beginning of the egg-laying period for the second generation of borers in 1928.

### FOREST AND SHADE-TREE INSECTS

#### MISCELLANEOUS FEEDERS

#### BAGWORM (*Thyridopteryx ephemeraeformis* Haw.)

Ohio

E. W. Mendenhall (September 9): The bagworm is quite bad in Yellow Springs attacking evergreens and also deciduous trees.

Missouri

A. M. Caudell (September 20): I saw a rather small maple tree almost defoliated by the bagworm at Independence.

Kansas

J. W. McColloch (September 19): The bagworm continues to be a pest of cedar, arborvitae, and boxelder in northeastern Kansas.

#### WHITE-MARKED TUSSOCK MOTH (*Hemerocampa leucostigma* S. & A.)

Nebraska

H. H. Svenk (August 25-September 25): The white-marked tussock moth continues to be a conspicuous shade-tree pest.

#### PALE TUSSOCK CATERPILLAR (*Halisidota tessellaris* A. & S.)

New York

E. P. Felt (September 24): The pale tussock moth is causing no damage this year on plane trees in Highland Park, Rochester where it has been so numerous earlier. The foliage was about all destroyed in the season by blight or anthracnose and this may have had something to do with the scarcity of the insect (R. E. Horsey).

#### FALL WEBWORM (*Hyphantria cunea* Drury)

New England

J. T. Schäffner, Jr. (September 23): This insect is common

throughout most of New England. Infestations seem to be on the decrease in many localities.

- Massachusetts A. I. Bourne (September 26): The fall webworm, on the whole, has been of normal abundance.
- Pennsylvania T. L. Guyton (September 27): I would like to report the presence of the fall webworm in rather unusual numbers in the vicinity of York, feeding on the foliage of maple, mulberry, cherry, and apple.
- North Carolina O. I. Snapp (August 19): An unusually heavy infestation of the fall webworm on pecan, forest, and shade trees between Charlotte and Greensboro has been reported; some trees were nearly defoliated.
- Nebraska M. H. Swenk (August 25-September 25): The fall webworm has been somewhat supernormally numerous on the shade trees in eastern Nebraska during the period covered by this report.
- Mississippi R. W. Harned (September 22): The fall webworm has begun to show up on hickory and pecan trees in the vicinity of A. & M. College.

A FALL WEBWORM (Hyphantria textor Harr.)

- New York E. P. Felt (September 24): The fall webworm, Hyphantria textor, appeared early in August and was very numerous on all kinds of trees, especially plums and related genera, in Rochester (R. E. Horsey). It was also somewhat numerous in a section about Albany and south in the Hudson Valley.

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

- New England and New York J. V. Schaffner, Jr. (September 23): Schizura concinna S. & A., is common throughout most of New England and northern New York. It was found feeding on boxelder, elm, poplar, wild cherry, willow, chokeberry, plum, apple, and sweet fern.
- Massachusetts A. I. Bourne (September 26): The red-humped caterpillars have been abundant since early August. They have not proven to be so abundant as during 1926, but have been rather more numerous than is usually the case.

GYPSY MOTH (Porthetria dispar L.)

- New York Monthly News Letter, Bureau of Entomology, No. 160 (August, 1927): J. V. Schaffner and C. M. Symonds, of the gypsy-moth laboratory, completed on August 30 a two week's trip into New York State, collecting native larvae to determine the dispersion of an imported gypsy-moth parasite, Compsilura concinnata. Although



this tachinid is one of the best of the imported gypsy-moth parasites, it is not dependent upon this host alone. It has been recovered from many native insects, and is known to be present at least 100 miles west of the gypsy-moth dispersion line. Approximately 150 different collections were made. These were obtained from the southeastern, central, and northwestern parts of the State, along a route which included Monroe, Binghamton, Cortland, Sherburne, Cazenovia, Oneida, Syracuse, Parish, Rome, Pulaski, Watertown, Antwerp, Ogdensburg, Gouverneur, Potsdam, Malone, Paul Smiths, Champlain, and Plattsburg. During the fall many parasite records are made from these collections, but in some cases the hosts must be held through the winter to obtain the parasites after hibernation.

ORIENTAL HAG MOTH (Chidocampa flavescens Walk.)

Massachusetts

J. V. Schaffner, Jr. (September 23): In Dorchester and Roxbury, Suffolk County, Chidocampa flavescens Walk. (oriental hag moth) is defoliating various small trees and shrubs in several back yards and vacant lots. On September 20, I noted the following completely defoliated: Norway maple, black birch, buckthorn, black oak, wild cherry, chokeberry, and pears.

CLOVER MITE (Bryobia praetiosa Koch)

Nebraska

M. H. Swenk (August 25-September 25): The clover mite has laid its eggs in larger numbers than usual on the trees in the vicinity of Omaha.

RED SPIDER (Tetranychus telarius L.)

New York

E. P. Felt (September 24): The red spider has been much less numerous than usual on Rochester evergreens owing to the cool, wet summer (R. E. Horsey).

Indiana

J. J. Davis (September 24): Red spiders injured red cedar at Indianapolis September 10, and elm at Richmond September 17.

Illinois

W. P. Flint (September 19): This mite has been reported from many sections of the State during the first of September.

A RED SPIDER (Tetranychus sp.)

New York

E. P. Felt (September 27): A red spider, Tetranychus sp., covered a large basswood tree at Rochester with a very pale web, there being a strip about two feet wide, and extending up into the tree and out along the bark on the branches. Beneath were millions of yellowish mites, giving a distinct yellowish color to the infested portion of the bark (R. E. Horsey). Five years ago, a similar condition, though the infested areas were smaller, was observed on a large beech tree at Port Chester, Westchester County, except

that the patches covered by the mites were only several inches in diameter and scattered here and there upon the trunk.

APHIDIDAE

Virginia

O. I. Snapp (August 20): Aphids were more abundant on maples and other shade trees this summer than for many years. Many complaints have been registered about "honeydew."

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Colorado

C. P. Gillette (September 3): This scale has become very destructive to ash and purple lilac bushes in Colorado from Dover northward. It is also destructive to the willows and even cottonwoods. In Fort Collins some large cottonwoods have died, apparently from the attack of this scale. At present, it promises to almost eliminate the ash trees from northern Colorado, except in towns where prompt measures are taken to keep it in check.

ARBORVITAE

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

Ohio

E. W. Mendenhall (September 10): The strawberry root weevil has been doing considerable damage to the arborvitae stock in the nursery at New Moore Field near Springfield. They girdle the new shoots and kill the plant back.

BIRCH

BIRCH LEAF MINER (Fenusa pumila Klug)

Maine

J. V. Schaffner, Jr. (September 23): Mr. Barnes of the gypsy-moth laboratory reports that through Bingham, Moscow, Carratunk, and The Forks in Somerset County, the foliage of paper birch is badly browned by a leaf miner, probably Fenusa pumila Klug.

New York

E. P. Felt (September 24): The birch leaf miner has been generally abundant in eastern portion of the State; browning the young terminal leaves.

BIRCH SKELETONIZER (Bucculatrix canadensisella Chamb.)

New York

E. P. Felt (September 24): The birch leaf skeletonizer cocoons were fairly common on red birch in Highland Park, Rochester, though little damage was seen (R. E. Horsey).

BOXELDER

A LEAF MINER (Gracilaria negundella Chamb.)

Colorado

C. P. Gillette (September 8): This little miner of the boxelder

leaves has been unusually abundant in the vicinity of Fort Collins during the past summer. The larvae first make numerous small blotch mines on the leaves which they leave when only partly grown and then roll the leaves in which to feed and complete their development. Boxelder leaves were received from near Akron that had been almost completely skeletonized from the attack of this miner.

#### CATALPA

##### CATALPA SPHINX (Ceratomia catalpae Boisd.)

Ohio

E. W. Mendenhall (September 9): The catalpa sphinx is quite abundant on catalpa trees at Yellow Springs and is doing considerable damage. (September 14): The catalpa sphinx is doing a lot of damage to the catalpa trees at West Alexandria, Preble County.

#### ELM

##### EUROPEAN ELM SCALE (Gossyparia spuria Moeber)

New York

E. P. Felt (September 24): The elm bark louse, Gossyparia spuria is not common in Rochester on trees which are watched and sprayed though a badly infested elm was seen near Lake Ontario (R.E.Horse).

Colorado

C. P. Gillette (September 3): This scale has long been present in some of the parks and nurseries about Denver, and is also gradually spreading to other parts of the State. Apparently this insect is thriving as well in the dry climate of Colorado as the eastern portions of the country.

##### ELM LEAF BEETLE (Galerucella xanthomelaena Schrank)

Connecticut

W. E. Britton (September 24): This insect is apparently less abundant than usual. I have seen some injury here and there about the State, but it was nowhere serious and the very wet weather in July and August was favorable to the trees and unfavorable to the insect.

#### HACKBERRY

##### A LACE BUG (Corythucha celtidis O. & D.)

Mississippi

B. W. Harned (September 22): Quite a number of hackberry trees in the city of Columbus are suffering from an attack of the hackberry tingid, Corythucha celtis mississippiensis

#### HEMLOCK

##### HEMLOCK SPANWORM (Ellonia fiscellaria Guen.)

New York

J. V. Schaffner, Jr. (September 23): Ellonia fiscellaria Guen.

was found to be abundant on hemlock in sections of Theresa, Flessis, and Redwood, in Jefferson County on August 26. In one area of about 50 acres, the stand being 80 to 90 per cent hemlock, the hemlock trees were stripped while the foliage of the deciduous growth showed very light feedings. A collection of larvae brought to the laboratory began giving adults of this species on September 12.

E. P. Felt (September 24): Hemlock measuring worms were extremely abundant near Theresa, Jefferson County, some 200 acres of hemlock being defoliated and presumably there was less material injury over a considerable area. Moths were flying in large numbers September 18 and depositing numerous eggs.

#### HICKORY

##### HICKORY BARK BEETLE (Scolytus Quadrispinosus Say)

North  
Carolina

Monthly News Letter, Bureau of Entomology, No. 160 (August, 1927): On July 15, 17, and 18 an outbreak of the hickory bark beetle, (Eccoptogaster Quadrispinosus) was discovered at Swannanoa, N. C. It has been in progress since the fall of 1925, when severe drought weakened many hardwoods and conifers. The outbreak was rapidly increasing in size, and if it had not been checked would undoubtedly have killed all of the hickories in its vicinity within the next two or three years.

R. A. St. George (September 27): On September 9, R. A. St. George left Asheville, N. C., for the Eastern Field Station, East Falls Church, Va. On the way across the State of North Carolina many dying hickory and oak trees were noted that appeared to be in a condition similar to those in the western part around Asheville and vicinity. This was particularly so at High Point and Greensboro. At the former place two large estates were visited on which there were about 50 dead hickory and 25 dead oak trees. The hickory trees were heavily infested by broods of the hickory bark beetle, Eccoptogaster Quadrispinosus Say, which were mainly in the larval stage. A few eggs were also found. Judging from the similarity of conditions with those near Asheville, where a thorough study of the situation was made, it would appear that the trees were weakened from the effects of the drouth of 1925 and were attacked that fall for the first time and have been breeding up in numbers since then. They have increased in numbers to such an extent that they are now a real menace to the community. At Greensboro in the Guilford Courthouse National Military Park, some 80 hickory trees were estimated to be infested by the hickory bark beetle.

#### LOCUST

##### LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

Massachusetts

J. V. Schaffner, Jr. (September 23): Mr. Hood of the gypsy-moth



laboratory reported through southeastern Massachusetts, large numbers of black locust trees heavily fed upon by Chalepus dorsal Thunb.

New York

E. P. Felt (September 24): The locust leaf miner has been reported as causing the browning of locust foliage in extensive Long Island areas.

LOCUST BORER (Cyllene robiniae Forst.)

Colorado

C. P. Gillette (September 8): This pest, which was introduced into Colorado many years ago in the vicinity of Denver, has gradual spread northward and eastward until it has destroyed a large proportion of the black locust trees in eastern Colorado. It was first noticed in Fort Collins only three or four years ago, and now the black locust trees in the city are nearly all dead or dying.

MAPLE

IMPERIAL MOTH (Basilona imperialis Drury)

Indiana

J. J. Davis (September 24): The imperial moth caterpillar partially defoliated Norway maples at Princeton on September 13.

GREEN STRIPED MAPLE WORM (Anisota rubicunda Fab.)

Kansas

J. W. McCulloch (September 16): The green striped maple worm has defoliated a quarter of mile row of maple trees at Olathe.

FALSE COTTONY MAPLE SCALE (Fulvinaria acericola Walsh & Riley)

Ohio

E. W. Mendenhall (September 26): I find the maple leaf scale on maple and haw trees in Columbus and vicinity.

OAK

OAK PILLGALL (Cincticornia pilulae Walsh)

Kentucky

E. P. Felt (September 24): The oak pillgall was extremely abundant on pin oak leaves at Louisville. Some of the trees showed a scant pale foliage and individual trees bore from 20 to 30 moderate sized galls.

Texas

E. P. Felt (September 24): Oak leaves badly infested by this species were received from Forestburg.

RED-HUMPED OAK CATERPILLAR (Symmerista albifrons S. & A.)

Michigan

R. H. Pettit (September 27): Considerable defoliation of oak trees by the red-humped oak caterpillar is being reported from the northern part of the State.

TWO-LINED CHESTNUT BORER (Agrilus bilineatus Web.)

North  
Carolina

R. A. St. George (September 27): Oak trees, consisting mainly of red and black, with some white oaks, were found to be suffering from a combination of causes. The principal ones seemed to be drouth and old age combined with a heavy attack of Agrilus all along the stem. A similar condition of the oaks was noted some 12 to 15 years ago in the northeast. Many of them died following a period of drouth; they were also infested by the same insect. Several oaks were noted to be dying in the Guilford Courthouse National Military Park also.

PINE

EUROPEAN PINE SHOOT MOTH (Evetria buoliana Schiff.)

Ohio

E. W. Mendenhall (August 27): The European pine shoot moth is reported from Cuyahoga County as doing considerable damage to Austrian pine in a nursery.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

North Carolina  
and  
South Carolina

Monthly News Letter, Bureau of Entomology, No. 160 (August, 1927): The southern pine beetle which has been rather inactive since spring, was discovered in numbers in the last two or three weeks.

INTRODUCED PINE SAWFLY (Diprion simile Hartig)

New York

E. P. Felt (September 24): The European pine sawfly has been very abundant in Rochester since September 1, the second brood stripping some of the pines (R. E. Horsey).

POPLAR

POPLAR BORER (Saperda calcarata Say)

Ohio

E. W. Mendenhall (September 9): I find the Carolina poplars in Yellow Springs affected by the poplar borer.

COTTONWOOD DAGGER MOTH (Acronycta lepusculina Guen.)

Nebraska

M. H. Suenk (August 25-September 25): From Dundy County, during the middle of September, a report was received of severe defoliation of poplar trees by the cottonwood dagger moth.

SPRUCE

SPRUCE GALL APHID (Chermes abietis L.)

New York

E. P. Felt (September 24): The spruce gall aphid is abundant on white and blue spruce in Rochester, both in parks and private grounds (R. E. Horsey).

PINE SCALE (Chionaspis pinifoliae Fitch)

Nebraska

M. H. Swenk (August 25-September 25): Numerous complaints of injury to spruce trees by the pine leaf scale have been received during the period covered by this report.

WILLOW

EUROPEAN WILLOW BEETLE (Plagiodera versicolora Laich.)

Connecticut

W. E. Britton (September 24): Apparently distributed over nearly all of the State. Feeds on glossy leaved willows.

GREENHOUSE AND ORNAMENTAL PLANTS

ASTER

BLACK BLISTER BEETLE (Epicauta pennsylvanica DeG.)

Indiana

J. J. Davis (September 24): The black blister beetle was reported damaging aster at Fort Branch, LaFayette, and Goodland the latter part of August and early September.

CHRYSANTHEMUM

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni Gill.)

Ohio

E. W. Mendenhall (September 16): The black chrysanthemum aphid is quite abundant on chrysanthemum in the greenhouse at Piqua.

CHRYSANTHEMUM LACE BUG (Corythucha marmorata Uhl.)

Mississippi

R. W. Harned (September 22): Specimens of the chrysanthemum lace bug were received on September 17 from Meridian, where they were causing serious injury to chrysanthemum.

IRIS

IRIS BORER (Macronoctua onusta Grote )

New York

E. P. Felt (September 24): The iris borer was seriously injurious to a large planting of Japanese iris and German iris in Dutchess County.

Maryland

E. N. Cory (September 13): On August 22 larvae and pupae, mostly the former, were found at Beltsville and on August 25 they were found in Baltimore, these mostly pupae.

Indiana

J. J. Davis (September 24): Iris borers were reported abundant and destructive to iris at South Bend the last of August.

LILAC

LILAC LEAF MINER (Gracilaria syringella Fab.)

- Massachusetts E. P. Felt (September 24): Work of this species was received from A. P. Morse, Salem. The insect is causing the lilacs in that section to look quite disreputable.
- New York E. P. Felt (September 24): The lilac leaf miner is generally distributed, and was seriously injurious to lilacs and privet in Rochester, and apparently the same work was observed at Niagara Falls (R. E. Horsey).
- Colorado C. P. Gillette (September 8): This pest was first noticed in Denver city parks several years ago, but it has now spread as far north as Fort Collins on the eastern slope and has become a rather serious pest to lilacs. Both last year and this, some of the bushes in the vicinity of Fort Collins have as high as 90 per cent of their leaves mined by this little moth. It first mines the leaf and then when about half-grown, the larvae leave the mines and roll the leaves in which they feed to finish their development.

PALMS

A BORER (Dinapate wrighti Horn)

- California F. H. Wymore (August 4): This is the first report we have had of this borer attacking living wood. In this case about 90 per cent of the transplanted fan-leaf palms were injured by the adult beetle boring into the growing tree tip or bud.

ROSE

UNICORN CATERPILLAR (Schizura unicornis S. & A.)

- Mississippi R. W. Harned (September 22): On September 20, Mr. H. Gladney, Ocean Springs, collected specimens of the unicorn prominent on a rose bush. He believes at least there have been three generations this year as this is the third time he has collected this species in the same yard this season.

I N S E C T S   A T T A C K I N G   M A N   A N D

D O M E S T I C   A N I M A L S

MAN

BEDBUG (Cimex lectularius L.)

- Indiana J. J. Davis (September 24): Frequent reports of trouble in dwelling houses are being received. The bugs were reported abundant and harmful in poultry houses at Rockville September 12.



MOSQUITOES (Culicidae)

Utah

G. F. Knowlton (September 3): Mosquitoes are so numerous in the beet fields around Thatcher and Penrose that it is difficult for men to work.

FLEAS (Ctenocephalus canis Curtis and  
Ctenocephalus felis Bouche)

Nebraska

M. H. Swenk (August 25-September 25): A recrudescence of complaints of infestations of houses, farm buildings, and hog lots by fleas similar to the situation during July occurred during the period covered by this report.

General  
statement

F. C. Bishopp (September 27): Complaints of household infestation of dog and cat fleas have come in from various parts of the United States in about the usual number. Many of these reports come from eastern Pa., Md., and D.C., and also some from Oregon.

CHIGGERS (Trombicula irritans Riley)

Texas

F. C. Bishopp (September 10): Chiggers have been rather troublesome throughout the season and are perhaps more abundant now than during the past several weeks.

SADDLE-BACK CATERPILLAR (Sibine stimulea Clem.)

Indiana

J. J. Davis (September 24): The saddle-back caterpillar was reported from Greensburg on August 29, and from Liberty September 14.

ANIMALS

CATTLE

STABLE FLY (Stomoxys calcitrans L.)

Kansas

J. W. McColloch (September 19): There has been a plague of flies, principally stable flies, in central Kansas. Farmers report that they are unable to work their horses and mules. Some animals are dying in Ellsworth and Kingman Counties. Milk and cream production has fallen off greatly in Reno, Phillips, and Kingman Counties. Beef cattle have lost weight. One shipper in Kingman County reports that his cattle lost 100 pounds per head. (September 21): A report from Bushlong states that the flies are very bad and that cattle are losing weight.

Arkansas

F. C. Bishopp (September 12): Stable flies are observed to be abundant and causing much annoyance to live stock in the central and northeastern parts of the State. The rice straw is no doubt responsible for at least part of this trouble.

General  
statement

F. C. Bishopp (September 26): Reports indicate about the usual amount of annoyance and losses from stable flies throughout the grain belt.

OX WARBLE (Hypoderma lineatum DeVill.)

Texas

F. C. Bishopp (September 15): Young stock are now showing heavy infestations of grubs. One group of eight head averaged 28 grubs per head; older cattle show lighter infestations. Although many of the grubs are in the late fifth stage, apparently none have matured and emerged.

SHEEP AND GOATS

SCREW WORM (Cochliomyia macellaria Fab.)

Texas

F. C. Bishopp (September 25): Screw worm flies have diminished in number through the major part of Texas. While there have been a good many cases in sheep and goats following fall shearing, the trouble has not been so bad as was anticipated, and in fact, is less acute than normal for shearing time.

HONEY BEES

WAX MOTH (Galleria mellonella L.)

Nebraska

M. H. Swenk (August 25-September 25): The unusual number of reports of infestation of colonies of honey bees with the wax moth mentioned in my last report, continued during late August and early September.

TURKEYS

THE BIRD TICK (Haemaphysalis chordeilis Pack.)

Michigan

R. H. Pettit (September 14): Specimens of a tick were received on the 15th of August from Benzonia with word that the turkeys run in the woods and come in with so many of these ticks about their heads that it is necessary to remove the ticks. These ticks were determined by Dr. H. E. Ewing as Haemaphysalis chordeilis commonly called the bird or turkey tick. I believe this will prove to be the first record for Michigan.

INSECTS INFESTING HOUSES  
AND PREMISES  
TERMITES

Nebraska

M. H. Swenk (August 25-September 25): A new infestation of a residence in Lincoln with our common termite, Reticulitermes tibialis Banks, was reported during the first week in September.

Kansas

J. W. McColloch (September 9): A number of reports of termite infestations have been received since my last report. Woodwork in dwellings has been destroyed at Olathe, Stockton, Osage City, Hope, Neodesha, Iola, and Abilene. The repairs on one house at Iola cost \$1,500. Damage to farm buildings is reported from Salina, Stockton, and Wells. Business buildings have been damaged at Matamoras and Hope. Print paper in a newspaper plant at Herington was injured. A few trees at Stockton are infested.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi

R. W. Harned (September 22): We have received a complaint from a person living in Starkville that the Argentine ants are so troublesome on his property that they have caused sitting hens to desert their nests. Many people in Aberdeen complain that the ants are so numerous in their houses that they have to shake them from the bed clothing at night. This town has not put on a control campaign since 1922.

CARPENTER ANT (Camponotus herculeanus pennsylvanicus DeG.)

Kansas

J. W. McColloch (September 16): Carpenter ants are reported infesting a dwelling at Stockton.

ANT ANT (Frenolepis (Nylanderia) sp.)

Mississippi

R. W. Harned (September 22): A housekeeper in Starkville complains that the small sugar ant, Frenolepis (Nylanderia) sp., has been causing her a great deal of trouble, getting into jellies and preserves.

BOOKLOUSE (Troctes divinatoria Müll.)

Kansas

J. W. McColloch (September 8): A suite of mohair furniture in a residence at Wichita is heavily infested with book lice.

POWDER POST BEETLES (Lyctus spp.)

Indiana

J. J. Davis (September 24): Powder post beetles were reported as damaging timbers of a building at Albion on September 9.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Kansas J. W. McColloch (August 26): A bad infestation of the cigar beetle is reported in a drug store at Kincaid.

A YELLOW JACKET (Vespa diabolica Sauss.)

New York E. P. Felt (September 24): Yellow jackets, Vespa diabolica Sauss proved annoying in a Wading River, L. I., dwelling, since they appeared to be nesting in window casings, gaining entrance through the holes above the sash cords.

S T O R E D   G R A I N   I N S E C T S

WEEVILS (Sitophilus spp.)

Georgia O. I. Snapp (September 12): Reports are coming to the laboratory of considerable injury to corn in the field from weevils.

Indiana J. J. Davis (September 24): Grain weevils were reported abundant in wheat and seeds in Indianapolis on September 13.



THE INSECT PEST SURVEY  
BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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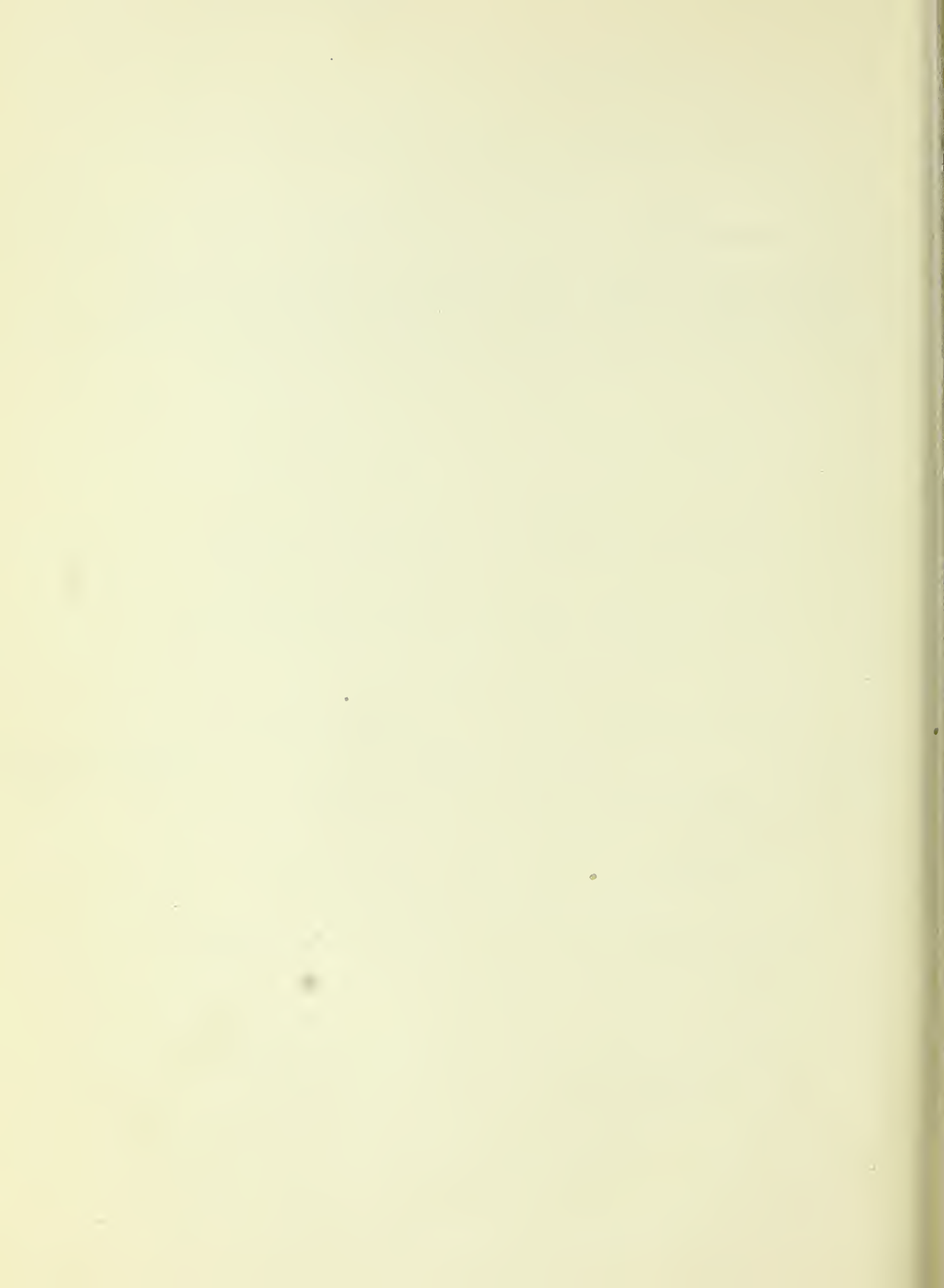
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# INSTITUTIONAL REPORT

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No. 9

## OUTSTANDING ENTOMOLOGICAL PROBLEMS IN THE MIDDLE ATLANTIC REGION FOR OCTOBER, 1927

A flight of the lesser armyworm caterpillar is reported from western Kansas and severe damage has already been done to fall-corn there in certain localities.

The fall armyworm is doing considerable damage in central Illinois, eastern Indiana, and Kansas.

The summer European-fly survey of the Middle Atlantic States shows lighter infestation than has prevailed for several years. A general summary of the survey appears in this number. Flies are also reported as abundant in south-central Kansas.

Several new counties in Pennsylvania, Ohio, Indiana, and Michigan have been found infested by the European corn borer in the course of the October scouting work.

The San Jose scale is not reported as unusually abundant from any part of the eastern fruit belt, though indications earlier in the season were that unusual infestations were to be expected.

In general, the codling-moth situation of the Eastern United States has been favorable. Considerable wormy fruit, however, is being found in eastern export apples.

The apple and thorn skeletonizer is reported for the first time from the State of Maine.

In the apple-growing section of West Virginia a very unusual outbreak of the apple maggot occurred this year.

In the peach-growing belt, the peach borer is so serious that an unusually large quantity of paradichlorobenzene is being used this year.

The African bark beetle has been found one county east of our last record in New York State (Steuben County). A single beetle has been found north of Washington, D. C., in Montgomery County, Maryland. An infestation in the eastern part of North Carolina is decidedly more extensive than last year. In North Carolina the recorded range is practically one tier of counties farther east than according to our last report, extending westward to a line between





GENERAL FEEDERS

WHITE GRUBS (Phyllophaga spp.)

Illinois W. P. Flint (October 17): Severe injury by various species of white grubs to corn has been reported from many points in central and northern Illinois.

Kansas J. W. McCulloch (October 1): The county agent of Cheyenne County reports that white grubs have destroyed a field of millet. Counts showed that there were seven grubs to the square foot.

SEALK BORERS (Pyrausta spp.)

Wisconsin E. L. Chambers (September 15-October 1): Lotus borers and smartweed borers, Pyrausta spp., are very abundant in several localities in limited smartweed patches and lotus beds.

CHAIN-SPOTTED GEOMETER (Girardia catenaria Drury)

Maine C. R. Phipps (October 6): The chain-spotted geometer appeared in destructive numbers about August 15, defoliating blueberry, sweet fern, gray birch, and many other plants.

Wisconsin E. L. Chambers (September 15-October 1): Thousands of moths were observed about the lights at Black River Falls on September 17. The surrounding bog land was stripped by larvae.

LESSER MIGRATORY GRASSHOPPER (Melanoplus atlantis Riley)

Kansas J. W. McCulloch (October 21): The lesser migratory grasshopper has caused some damage to fall-sown wheat in western Kansas. Flights have been reported from Great Bend and Dighton. (September 30): These grasshoppers are reported to be present by the hundred or thousands in the fields of Falco. On September 29 a big flight of grasshoppers passed over Great Bend.

GENERAL AND FORAGE - CROP INSECTS

MISCELLANEOUS FEEDERS

FALL ARMYWORM (Leptomyrma frugiperda S. & A.)

Alabama H. T. Spong (September 25-October 25): During the first week in August an instance of the fall armyworm caterpillar attacking the ears of corn, and burrowing in the cob of the attached ear, was found in Cato County.

Illinois W. P. Flint (October 17): Fall armyworm larvae have been reported from several points in central Illinois, injuring corn and alfalfa.

Kansas

J. W. McCulloch (October 1): Corn plants sent in from Liberal were badly injured by the fall armyworm. The leaves had been destroyed and the worms were working in the ears and stalks.

VITAL

RUSSIAN FLY (Phytophaga destructor Say)

Great Atlantic  
States

G. J. Hill and H. D. Smith (October 3): Russian-fly surveys made this summer show more fly infestation in the eastern wheat-growing area than there has been for some years past. Records of percentage of infestation were based on culms. The following summary shows the average infestation per county of the States under survey:

State	1927		1926	
	Number of counties	Infestation per county, per cent.	Number of counties	Infestation per county, per cent.
Penna. ....	21	33	21	1
Del. ....	3	7	1	0
Md. ....	10	21	8	2
N.J. ....	1	4	—	—
Va. ....	11	25	8	1
N. Va. ....	2	51	2	0

Kansas

J. W. McCulloch (October 20): A survey made during early October shows the fly abundant in the south-central part of the State, also one infestation in Thomas County.

PLAINS FALSE WIREWORM (Elcodes opaca Say)

Kansas

J. W. McCulloch (September 25): Wheat is being destroyed before germination at Piercerville and Garden City.

CORN

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

General  
Statement

Monthly Letter, Bureau of Entomology, No. 161, (September, 1927): A summer shipment of 30,240 Pyrausta nubilalis chrysalids, parasitised by Phaeogenes planifrons Wasm. and 7,530 cocoons of Diocetes punctatoris Roman. was made on August 9 from Genoa, Italy, by the European parasite laboratory at Hyeres, Var, France. These parasites were collected by Dr. M. L. Parker at Bergamo, in Lombardy. Total shipments of Pyrausta parasites from Europe to this country for the last fiscal year were Eulimneria crassifemur Thom., 47,340; Diocetes punctatoris, 11,209; Mesicera senilis Rond., 1,652; Microgaster tibialis Loes., 133,722; and Phaeogenes planifrons,



and Manitowlin Island in northern Lake Huron and at several points in Quebec. Nova Scotia has been scouted but no borers found there.

CORN EAR WORM (Heliothis obliqua Fab.)

North Carolina

A. E. Cameron (October 1): This insect was reported by the county agent of Craven County as severely injuring soy beans.

Wisconsin

E. L. Chambers (September 13-October 1): Less than 20 per cent of the sweet corn in southern counties is infested with the corn ear worm.

Michigan

A. H. Green (September 25-October 5): Complaints of injury by the third brood of the corn ear worm continued to be received in about the normal number during the latter part of September and the first week in October.

CORN ROOT WORM (Diabrotica longicornis Say)

New York

E. P. Holt (October 25): Corn root worm adults were numerous September 15 in a corn field at Cayuga Falls, Livingston County, being attracted to ears which had been injured by raccoons.

CORNFLAX

FOUR-SPOTTED BEAN WEEVIL (Callosobruchus quadrimaculatus Fab.)

Mississippi

E. W. Farned (October 6): Serious injury to field beans by this species was reported from Calumet October 6.

COTTON CURCULIO (Chalcodermus aeneus Boh.)

Mississippi

E. W. Farned (October 6): Serious injury to field beans was also noticed at Calumet October 6.

GRASS

A WEEVIL (Craibius sp.)

California

Monthly News Letter, Los Angeles County Horticultural Commission. Vol. 9, No. 15 (October 15): The small dark brown insect larva found feeding on grass roots and recently reported from many parts of Los Angeles County as causing considerable injury to plants represent a species of saw fly larva or crane fly, according to determinations received by E. W. Armitage, Entomologist, Los Angeles County Horticultural Commissioner's office, from eastern authorities on this group. These insects are recorded as being of more or less common occurrence throughout the United States, but only occasionally causing serious injury to their hosts. They



live in silken tubes just below the surface of the soil, feeding on the roots and foliage of grasses and cereals and in some of the larger cereals up into the stems.

GREEN JUNE BEETLE. (Cotinis nitida L.)

North Carolina R. W. Leiby (October 14): Larvae of the green June beetle are causing considerable damage to grass lawns and golf courses. The damage appears somewhat more serious than last year.

C. H. Brannon (October 20): Mr. E. W. Bower, Gastonia, reports that his home lawn has been seriously damaged by June bug larvae. Mr. A. R. Morrow reports the June bugs have caused serious injury to golf greens in the vicinity of Slatersville.

F R U I T I N S E C T S

MISCELLANEOUS FEEDERS

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

middle Atlantic States E. Kostal (October 4): Inspection of export apples from the Middle Atlantic States during the month of September, at the Port of New York, reveals considerable infestation of San Jose scale. Out of approximately forty carloads or part carloads inspections, this insect was present in nineteen instances, infestation ranging from 1/2 of 1 per cent to 40 per cent of the apples in inspection samples.

Virginia O. I. Snapp (October 20): The San Jose scale increased rapidly during the summer, and by the latter part of August the infestation was very heavy. Recent observations have revealed the fact that many of the insects have died since summer, probably as a result of predacious enemies or parasites. The same thing occurred in 1925. I am still wondering if the general use of lubricating-oil emulsions for scale control during recent years has not allowed the predacious enemies and parasites of the San Jose scale to become more numerous than was the case when caustic scale sprays were used.

O E. W. Mendenhall (October 1): The San Jose scale in southwestern Ohio is held quite well in check, except in the exceptional outbreaks.

Liana B. A. Porter (October 25): San Jose-scale infestations this season have been about average in intensity, neither unusually light nor unusually heavy.

Wisconsin E. L. Chambers (September 15-October 1): A survey for the San Jose scale has been made. There were 25 orchards in Racine

County, 75 orchards in the State, and 18 city parks found to be infested. Apples, plums, and cherries, and shrubs were attacked.

### JAPANESE BEETLE (*Elephantomyia japonica* Fernald.)

Monthly Letter, Bureau of Entomology, No. 10 (September, 1927).  
Owing to the fact that the activities of the adult Japanese beetle have ceased for the present season, it was possible on October 1 to lift the quarantine regulations covering farm products. No beetles have been found in any farm products inspected in the last week of September. Owing to the unusually cool nights, the few beetles remaining at a number of points within the infested area have shown a tendency to crawl down into flower blossoms for protection, drilling being observed in this respect. Since a considerable quantity of cut flowers are still being shipped from the regulated area to outside points, it has been considered impracticable to permit the unrestricted movement of these articles. As a result, the quarantine restrictions requiring inspection and certification of cut flowers are being continued until October 1, the maximum limit of the quarantine on farm products and cut flowers. Three large shipments of geranium material were received at the laboratory in September. One of these, a consignment of *Epiphyllum* from India, was taken from the boat at Boston and rushed to Haverton by messenger, thus saving considerable time which otherwise would have been consumed between these two points.

### MEDITERRANEAN FRUIT FLY (*Ceratitis capitata* Wied.)

Philippines

Monthly Letter, Bureau of Entomology, No. 101 (September, 1927):  
E. M. Willard and Arthur C. Mason, of the Honolulu station, report that records of infestation of fruits by the Mediterranean fruit fly indicate that the fly was less abundant about Honolulu during 1927 than during any of the previous 5 years.

### ROD

### RODING MOTH (*Carposcopa rosella* L.)

Middle Atlantic States

B. Kost (October 4): The rodling moth has been common, in one case 20 per cent of the apples in the inspection sample for export being infested. These apples of the varieties Ben Davis, Ohio, Jonathan, and Delicious, were produced in the States of Delaware, Maryland, Virginia, and West Virginia.

Indiana

B. A. Porter (October 21): This season the control of the rodling moth has been somewhat difficult due to the fact that the case in recent years. During the rodling moth season, the first larval stage of the moth or fruit was found to be present in the infestation, for the reason that the larvae were found in the fruit. As a result, there were few larvae found which could enter during the first half of the first half of

September, when conditions were very favorable to the codling moth, and the number of late comers was reduced to a very low point.

E. L. Chambers (September 15-October 1): From 5 to 20 per cent of the apples are infected with the codling moth over the entire State.

#### APPLE AND THORN SKELETONIZER (Homorophila pariana Clerck)

J. A. Phipps (October 5): This is the first report of this insect in Maine although similar injury was noted on Cutts Island last summer. Foliage turned brown in July and August in unsprayed and lightly sprayed orchards.

E. P. Felt (October 25): Apple and thorn skeletonizer adults have been flying in numbers the last two weeks in various localities in the central and southern part of the State, areas where there has been considerable foliage injury the past season.

#### APPLE MAGGOT (Rhagoletis pomonella Walsh)

F. L. Brooks (October 17): I desire to report that for the first time within my memory we are having at French Creek a serious outbreak of the apple maggot. It seems to be confining its attacks, so far as I have observed, to Grimes Golden. Around 75 per cent of the fruits of that variety are infested. Previously I have found the species in West Virginia only at elevations around 3,000 feet above sea level. This occurrence, at about 1,600 feet altitude, is unusual for this region.

E. L. Chambers (September 15-October 1): The railroad worm is very abundant in some LaCrosse and Trempealeau County orchards.

#### SCURFY SCALE (Chionaspis furfura Fitch)

L. W. Mendenhall (October 1): I find that apple trees and even apple stock in the nurseries in south eastern Ohio are badly infested with the scurfy scale, giving a white apple russet.

#### PEAR

##### PEAR SLUG (Triocnemis linearia Retz.)

L. W. Mendenhall (October 5): I find outbreaks of the pear slugs on pear stock in some of the nurseries in Miami County.

#### PEACH

##### PEACH BORER (Agrota exitiosa Say)

C. I. Snapp (October 20): Alloch. paradichlorobenzene is being used in Georgia this year than for several years. This is largely due to

peach tree borer infestation. For several years the Georgia peach growers have not been giving so much attention to this pest as they should, and as a result the infestation has materially increased and much damage has resulted to the trees.

Ohio

E. W. Mendenhall (October 3): The work of the peach tree borer is about as severe as usual.

Illinois

W. F. Flint (October 17): Adult peach tree borers continued to emerge up to October 5, at Carbondale, in southern Illinois. In some cases peach growers in this section had applied paradichlorobenzene early in September. These treatments would probably not prevent injury by the larvae hatching from the eggs of late-emerging moths.

#### ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Georgia

C. L. Snapp (October 21): This insect has spread to many new localities in Georgia during the 1927 season, although it is still not a pest of major importance in sections where late peaches and apples are not grown. This insect is now in hibernation here.

#### SMARTWEED CATERPILLAR (Acronycta obliqua A. & S.)

Illinois

W. F. Flint (October 17): This caterpillar has been found in moderate numbers on the foliage of peach. In some cases as much as 25 per cent of the trees in certain orchards were being badly defoliated by this pest.

#### TARNISHED PLANT BUG (Lycus pratensis L.)

Indiana

B. A. Porter (October 22): The tarnished plant bug is very abundant on almost all plants. We are particularly interested in this species as a peach pest, and its abundance this fall threatens serious damage to peaches next spring.

#### LOGANBERRY

#### RASPBERRY FRUIT WORM (Eyturus unicolor Say)

Washington

J. J. Sneider (October 24): On Vashon Island, Puget Sound, as the growers of loganberries delivered their crops to the canneries, near Tacoma, they were rejected on the grounds that the berries were wormy.

#### PEACH

#### PEACH SHUCKED MOTH (Laspeyresia caryana Fitch)

Mississippi

R. W. Hines (October 3): On October 3, inspector R. E. Colmer,



Long Beach, report it is related to the above as follows:  
 "The truckworms are the worst thing that I have seen for quite  
 a while. They are coming out of the entire opening of the  
 shucks and then the worm itself is also killed. I think the reason  
 for it is that last year after the storm many of the growers did  
 not attempt to clean up under the trees and the shucks with the  
 leaves in them were not disturbed until spring." Another rather  
 serious complaint in regard to the above truckworm was received on  
 October 13 from Chula Vista.

## SPIDERS

### RED SPIDER (*Tetranychus telarius* L.)

California Monthly News Letter, Los Angeles County Horticultural Commission,  
 Vol. 4, No. 10 (October 15): Serious "red spider" injury has been  
 noticed recently in citrus orchards in eastern Los Angeles County  
 according to Deputy Horticultural Commissioner, K. H. Wolff. Gen-  
 erally speaking, damage has been found to be most severe in orchards  
 which have not been recently irrigated. While the number of spiders  
 was found to be nearly as great on some of the more recently irri-  
 gated properties, the amount of injury from their attacks was no-  
 ticeably less. In many orchards where control measures have not  
 been applied soon enough, the drying and dropping of foliage have  
 been severe.

## TRUCK - CROP INSECTS

### MICELIATEOUS WEEVERS

### BLACK CUTWORM (*Agrotis unicolor* Rott.)

Mississippi E. W. Bernal (October 27): Two rather serious complaints have been  
 received recently in regard to the greasy cutworm. Specimens of  
 this species, identified by S. H. Cress of the Bureau of Entomology,  
 were received from Coconino County on October 7. The correspondent  
 from Coconino County stated that they had apparently destroyed his  
 entire batch of turnips in one night. Specimens tentatively iden-  
 tified as this species by J. H. Kingston were received from Grace  
 on October 18. The correspondent stated that the worms had de-  
 stroyed about 1000 plants of alfalfa out of a 25-acre field.

## BEETLES

### COLORADO POTATO BEETLE (*Lepidotoma jacobaeae* Say)

Colorado E. I. Johnston (October 15-October 17): The northern counties  
 have been surveyed in the Colorado potato beetle with negative  
 result.

POTATO LEAFHOPPER (*Scaphocephalus* Latr.)

Wisconsin

J. H. Jennings (September 15-October 1): The potato leafhopper has infested from 25 to 50 per cent of the potatoes in northern counties. Potatoes are also attacked by it.

CABBAGE

CABBAGE WEBWORM (*Heliothis undulalis* Fab.)

Mississippi

E. W. Smith (October 27): The imported cabbage root worm has been very abundant in Mississippi during the past few weeks. Cabbages and turnips are the principal crops that have been injured. Specimens accompanying my statements in regard to serious damage that they were causing have been recently received from Jackson, Hinds, Monroe, and Adams Counties.

CABBAGE ARIID (*Brevicoryne brassicae* L.)

Mississippi

J. W. Harned (October 10): Ariids were reported on cabbage at Hamilton October 10.

BLISTER BEETLES (*Meloidae*)

North Carolina

J. A. Trammell (October 1): Blister beetles have been reported to be severely damaging collards near Tarax, Sampson County.

STRAWBERRY

STRAWBERRY LEAF ROLLER (*Anoxia connotata* Trögl.)

Massachusetts

J. B. Smith (September 25-October 25): Strawberry leaf rollers were reported injuring the foliage of strawberry plants in southeastern Lancaster County during the second week in October.

Massachusetts

J. W. McCulloch (October 10): A heavy infestation of this insect is reported from North Tolland.

MEXICAN BEAN BEETLE (*Euphoria connexa* ulc.)  
beetle

New York

H. E. Howard (September 22): The Mexican bean beetle has been reported from Steuben County.

Florida

J. H. Gray (October 1): A single beetle has been found at St. Augustine. It was another at St. Augustine, St. Augustine, at St. Augustine.

Carolina

C. H. Smith (October 1): This beetle has caused considerable damage all over the infested areas of the State this year. It is spreading east rapidly and has been found in Columbus and up through Martin and Halifax Counties. (October 26): Mr. W. C.

Forvell of Wendell reports this insect is attracted by a remarkable amount of Mexican bean beetles and that all records have been destroyed there. No control was attempted.

outh Carolina W. F. Forvell (September 22): This insect has been recorded from the following counties: Chesterfield, Marlboro, Darlington, Dillon, Lee, Suter, Darwell, and Georgetown.

Ohio E. W. Mendenhall (October 12): The Mexican bean beetle has been reported as very injurious in Harrison County during the summer and fall.

Michigan H. E. Howard (September 23): The Mexican bean beetle has been reported from the following counties: Oakland, Wayne, and Macomb.

### CUCUMBER

#### STRIPED CUCUMBER BEETLE (*Leptotricha vittata* Fab.)

Wisconsin E. L. Chambers (September 14-October 1): The striped cucumber beetle has been observed on cucumbers in the southwestern part of the State, but no noticeable damage.

### SQUASH

#### MELON WORM (*Dianthia hyalinaria* L.)

Mississippi K. L. Cochran (October 19): This insect was found damaging late squash at Eiloxi during September.

### CARROT

#### PARSLEY STEAM WEEVIL (*Listronotus latiusculus* Boh.)

Illinois W. F. Flint (October 17): The results of a recent survey in the infested territory within a 40-mile radius of East St. Louis showed over half the carrot patches infested with this carrot weevil, the infestation ranging from 10 to 100 per cent with an average of about 40 per cent.

### TURMIE

#### TURMIE BEETLE (*Leptotricha vandenbergi* Davis)

Mississippi K. L. Cochran (October 19): Doing considerable damage to turnips and turmies.

#### CARROT BEETLE (*Leptotricha albopicta* DeG.)

Missouri J. W. McCulloch (September 25): Carrot beetles are causing serious injury to turnips at Eiloxi.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

Mississippi

A. L. Cockran (October 19): The striped flea beetle did serious damage to turnips in Pileoxi during September and October.

SWEET POTATO

SEMITROPICAL ARMYWORM (Xylomyges orizania Clem.)

Mississippi

E. W. Harned (October 13): Serious injury to one corner of a sweet-potato field near Vicksburg was reported on October 13, by the semitropical armyworm, Xylomyges orizania.

SOUTHERN FIELD-CROP INSECTS

COTTON

BOLL WEEVIL (Anthrenus grandis Bo.)

PINK BOLL WORM (Pectinophora gossypiella Guend.)

Mexico

H. I. Jackson, American Consul (October 16): Due to the great amount of damage by the boll weevil and pink boll worm, the 1927 cotton crop of the Laguna region, which in June was placed at 90,000 bales, is now estimated at not more than 75,000 bales. A certain amount of damage is always expected in the Laguna from the pink boll worm, but the boll weevil as a rule does but little damage. This year, however, both are exceedingly bad and the damage being wrought by them will amount to at least 50 per cent of the crop.

BOLL WORM (Heliothis obsoleta Fab.)

North  
Carolina

G. H. Brannon (October 27): The county agent of Halifax County reports under date of October 21 "In the field where they were found there was an average of at least two bolls per stalk that were ruined, and the bolls that this worm ruined were the ones we had saved from the weevil by dusting."

Mexico

A. J. Morrell (October 2): Following a thorough clean-up of infested wild cotton plants in the Toluca Valley as well as the only field of cultivated cotton in the valley in 1926, no infestation of the 1927 crop was discovered until late in September in fields kept under close surveillance during the season. No damage possible to the 1927 crop.

COTTON LEAF WORM (Alabama argillacea Linn.)

Indiana

B. A. Porter (October 22): Fruit in this section has been practically uninjured by the cotton leaf worm. One grower reported that only a few worms on the cotton leaf were present.



about the middle of September. This is very different from the situation in 1929, when tree moths appeared in September by millions and caused serious damage.

Michigan  
E. Z. Daniel (October 12): The first specimen of Deboraha  
griffithsi in Michigan, so far as has come to our notice, was dis-  
covered yesterday. This creature has not yet appeared in numbers,  
only a single specimen having been observed at East Lansing.

## FOREST AND SHADE-TREE INSECTS

### MISCELLANEOUS PESTS

#### FRUIT-FLY

Ontario  
J. O. Evenden (October 2): Throughout the city of Libby the elms,  
imported trees, and borderers are being seriously attacked by  
fruit-flies (species unknown). This attack is so heavy as to in-  
jure seriously the appearance of the trees and to cause the death  
of some few individuals.

#### WHITE-NECKED TUSsock MOTH (Heterocampa leucostigma S. & A.)

Nebraska  
H. E. Searle (September 25-October 25): The white-necked tussock  
moth continued to be conspicuous during the period covered by  
this report.

#### COTTONWOOD DAGGER MOTH (Acronycta bonelli Riley)

Nebraska  
H. E. Searle (September 25-October 25): During the latter part of  
September and the first ten days of October the cottonwood dagger  
moth, Acronycta bonelli, appeared in conspicuous numbers on the  
shale trees of Lincoln.

#### PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Nebraska  
H. E. Searle (September 25-October 25): Complaints of injury by  
the pine leaf scale on spruce and pine continued to be received  
during the period here reported.

#### WORM

#### WORM (Prothylus tenuellus Fitch)

New York  
H. P. Davis (October 26): Millions of the worms were leaving from  
adult trees and going down the branches and tree trunks and cov-  
ering the ground for a couple of feet from the base, in the  
case of an older tree 50 feet high in a field. Several  
other near-by older trees were not inspected (H. E. Morsey).

ASCOMYCE

A RED SPIDER (Arctomycetes annulatus J. C. S.)

Massachusetts

W. I. Bourne (October 15): Several hundred ascomycte trees constituting the "Red Spider" at Cape Cod, Massachusetts Girl Scout. The trees, which are heavily infested with the spider mite, are later infested by the spider mite, Paratetranychus annulatus J. C. S.

POWELLER

POWELLER (Neotocoris trivittatus Say)

Massachusetts

J. W. McCallum (October 20): At this season of the year the poweller bugs are proving a serious annoyance in many homes over the State.

CALYPTA

CALYPTA (Coratonia catalpa Loisel.)

Ohio

E. J. Ward (October 7): I find no caterpillars of the catalpa feeding moth in Ward County. They come much later this year.

Illinois

A. J. Davis (October 17): The catalpa caterpillars have been a little less numerous than during the last two or three seasons. Many fields have been left with a complete defoliation.

Indiana

B. A. Foster (October 22): The catalpa caterpillars are rather scarce this season, and very little defoliation has been observed.

ELM

ELM (Chlorocampa monticola Schrank)

Ohio

E. J. Ward (October 11): The elm caterpillars have been considerable damage to the elm trees in Hamilton and vicinity. The caterpillars are now feeding and are not feeding on the leaves as they could.

FIR

FIR (Neotocoris trivittatus Say)

Indiana

B. A. Foster (October 20): There is a great deal of the fir tree in the State, but it is not as common as other alarming species of Neotocoris (e.g., Neotocoris). The fir tree is in groups of trees and is not as common as the other species.



Montana

A. C. Everett (October 2): For the past few years a serious epidemic of the mountain pine beetle has existed in the pine stand (lodgepole pine) in the drainage of the East Fork of the Flathead River. About 75 per cent of the timber on the range over which the epidemic has spread has been destroyed. The most serious part of this infestation was spread into the Big Lost Lake and its vicinity in 1937.

SPRING-FLY (Diptera: Simuliidae) (Simulium)

California and Oregon

Montana: Foster, (September 17, No. 151 (September, 1937)). R. A. Hill reports that the infestation of the San Bernardino area of several years ago in the Inyo National Forest has died this year. A heavy rain and a large windfall occurred in this region, several million feet of timber were blown down. This infestation developed in the blow-downs, and attached green timber, but soon lost its force after the downy timber from the windfalls was no longer available. Surveys of the California-Oregon contour line, conducted by F. P. Hill during the recent summer, showed the worst losses of the last 10 years. In 1937 more than 10,000,000 feet of timber were killed. Private owners in this area are very much distressed, and it is probable that a great deal of timber will be cut down during the coming winter and spring.

SPRING-FLY (Diptera: Simuliidae) (Simulium)

Ontario

F. H. Hill (October 1937): The pine leaf scale is quite abundant on the pine in the vicinity of the properties in Troy.

SPRING-FLY (Diptera: Simuliidae) (Simulium)

Ontario

F. H. Hill (October 1937): The pine leaf scale is quite abundant on the pine in the vicinity of the properties in Troy.

February

F. H. Hill (September 29-October 1937): In Richardson County, Nebraska, the pine leaf scale is quite abundant on the pine in the vicinity of the properties in Troy.

ICOPHILA

ICOPHILA (ICOPHILA)

California

F. H. Hill (October 1937): The pine leaf scale is quite abundant on the pine in the vicinity of the properties in Troy.



TULIP

TULIP SCALE (Empoasca liriodendri Goss.)

E. F. Felt (October 10): Tulip scale is reported from the tulip scale on the middle of the main river bridge, outside of city.

GREENHOUSE AND CONSUMABLE PLANTS

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Chrysanthemum pygmaea Goss.)

E. M. Henderson (October 12): The chrysanthemum midge is doing damage to chrysanthemum in greenhouse in Delaware.

IRIS

IRIS PSYLLID (Psyllonotus iridis Goss.)

E. M. Henderson (October 12-13, 1900): Infestation of iris by the iris psyllid is reported in some parts of the State in greenhouse plantings, but not in the open air.

IRIS PSYLLID

IRIS PSYLLID (Psyllonotus iridis Goss.)

E. F. Felt (October 10): The iris psyllid scale persists on Juncus plants in the vicinity of New York City to such an extent that plant authorities have experienced difficulty in controlling it by ordinary means.

IRIS

IRIS PSYLLID (Psyllonotus iridis Goss.)

E. F. Felt (October 10): The iris psyllid scale continues to do damage to iris plants in the vicinity of Rochester, New York, but for some time the iris plants in the north (E. F. Felt).

IRIS

IRIS PSYLLID (Psyllonotus iridis Goss.)

E. F. Felt (October 10): The iris psyllid scale continues to do damage to iris plants in the vicinity of Rochester, New York, but for some time the iris plants in the north (E. F. Felt).

REPORTS

REPORTS FROM ENTOMOLOGICAL LABORATORY (Continued)

Florida

W. H. Coker (October 10): Insect damage to vegetation by Scaphytophragma flavipes has been reported from College Park.

REPORTS

SCOUT STAIN (Scoutia scutellaria S. S. H.)

Ohio

W. H. Coker (October 3): I find a small, Scoutia scutellaria flavipes on the leaves of Scutellaria scutellaria near Dayton, but not doing much damage.

REPORTS

SCUTELLARIA INSECT (Scutellaria scutellaria S. S. H.)

Ohio

W. H. Coker (October 3): I find this insect very common on the leaves of the red and orange Judas trees at Dayton. It was abundant in the leaves.

INSECTS ATTACKING MAN AND

DOMESTIC ANIMALS

REPORTS FROM ENTOMOLOGICAL LABORATORY (Continued)

Wisconsin

W. H. Coker (September 15-October 15): Many complaints of cat and dog bites have come in during the past two weeks, of and from in droppings.

Illinois

W. H. Coker (September 15-October 15): Reports of infestation with Stenoseius capitatus continued to be received during the latter part of September and the first ten days of October.

General Statement

W. H. Coker (October ): Reports of household and factory infestation of fleas continued to come throughout the month. The fleas came from Pennsylvania, Maryland, Virginia, and Ohio. One report from Connecticut.

REPORTS FROM ENTOMOLOGICAL LABORATORY (Continued)

North Carolina

W. H. Coker (October 1): This insect, a very small, dark, wingless insect, was found on the leaves of Scutellaria scutellaria near Dayton. It was abundant in the leaves. The insect was found on the leaves of Scutellaria scutellaria near Dayton. It was abundant in the leaves. The insect was found on the leaves of Scutellaria scutellaria near Dayton. It was abundant in the leaves.

suffered severe pain and had to be operated on for relief. These caterpillars were feeding on pear and cherry foliage and those who were stung were picking fruit. Mr. R. W. Pan, county agent, Fort Worth County, sent in specimens and first reported the activities of the pest.

### 2. HORN FLY

#### HORN FLY (*Tabanidae irritans* L.)

F. C. Bishop, (October 25): Mr. D. C. Farnham reports as follows: "The horn fly was rarely noticeable at Uvalde during the summer, and there were generally less than 100 on an animal October 1-10. At Brackettville the same conditions prevailed. At Del Rio there were a few more flies; some cattle had as many as 500. On October 18 and 19 flies were noticeable on all cattle and some had as many as 1,000 to 2,500 at Slaughter and Sonora. About the same conditions prevailed at Odessa and Sheffield on October 20 and 21 as at Sonora. There were more flies at Fort Stockton, some cattle having as many as 3,000 to 3,500. At Alpine and Marfa on October 21 and 22 flies were annoying all animals to a great extent and some cattle had swarms of the flies 5,000 to 10,000. The horns of all cattle are discolored at the base by excrement of flies and some cattle appear to have a pint of flies settled on the horns and about the head."

#### ARM CH WORM (Hypoderma lineatum DeVill.)

F. C. Bishop, (October 25): D. C. Farnham examined cattle in a number of different localities in southeastern Texas showing that there is a great variation in the seasonal development of the grubs in the animals, while at Uvalde many grubs were in the fifth instar and some had matured and left the hosts. The following conditions were noted at points westward: Marfa, October 22, an examination of 52 mature dairy cattle showed an average of 1.7 grubs per head which had appeared in the subcutaneous tissue of the back to date. Maximum number in one animal was 17. All grubs in third and fourth instars. Del Rio, October 11-13, D. C. Farnham examined 139 dairy cattle and found that no grubs had appeared along the backs. Fort Stockton, October, 20, 21 cattle were examined, but no grubs were present along the backs.

### 3. BROWN DOG TICK

#### BROWN DOG TICK (*Rhipicephalus sanguineus* L.)

F. C. Bishop, (October 25): Specimens of the brown dog tick sent in from Char and Hill with the remark that they were on dogs and around houses. This is the first record of this tick in the North's report.

POULTRY

CHICKEN LICE

Maryland  
and  
Virginia

F. C. Bishopp (October 25): The normal fall reduction in the numbers of chicken lice is taking place. Several flocks have been observed with moderate to heavy infestations of body lice. Shaft lice appear to be next in number, with head, fluff, and wing lice comparatively scarce.

PIGEON HIPPOBOSCID (Lynchia maura Bigot)

Washington, D.C.

F. C. Bishopp (October 31): Specimens of the pigeon hippoboscids have been received from the District of Columbia.

INSECTS INFESTING HOUSES

AND PREMISES

TERMITES

Kansas

E. W. McCulloch (October 3): Termites have killed five cherry trees in a yard at Winslow.

PHARACH'S ABE (Phnomorium pharachi L.)

Mississippi

M. R. Smith (October 27): Inspector J. H. Beal of the Department of Botany of the Mississippi A. & M. College recently received a package of plants from Union, on which were many workers and three thousands of Pharach's Abe. This shows how easily this species is spread from town to town through shipments of plants, groceries and other forms of commerce.

ARGENTINE ANT (Iridomyrmex humilis Mayr.)

Mississippi

M. R. Smith (October 27): Inspector E. A. Gray, Natchez, recently sent to this office specimens of the Argentine ant which he took from a ship, the Florida, which had docked at Natchez. He states that the ants were quite plentiful aboard the ship. It flies between Fort Adams and Tutu, Miss. and Vidalia, La., and perhaps other places.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi

M. R. Smith (October 27): The fire ant continues to be the source of much complaint. The ants are complained of as getting into food, especially bread, butter, etc., stinging children, biting holes into clothing, building nests in the walls and other places, and doing other damage which will rank it second to the Argentine ant as a pest in this State. Inspector Chesley





The upper parts of Illinois' school houses, sometimes completely covered by the pest and other objects suspended from the ceiling, also the walls, etc., etc. are now being laid out for the purpose of showing the pest. Many people are starting this season of the year.

GRASSHOPPER PESTS (Grasshopper, etc.)

Illinois

W. P. Flint (October 17): The grasshopper pest has been reported as being up to the furniture in the houses and in stores. The pest is becoming one of our most common, reported household pests.

Illinois

J. W. McMillan (October 17): The grasshopper pest is giving a lot of trouble in furniture stores at Illinois.

J. W. McMillan (October 17): The grasshopper pest has been reported as being up to the furniture in the houses.

POWELL POND BEETLES (Powell Pond Beetle, etc.)

Illinois

W. P. Flint (October 17): Several cases of injury by the larvae of the beetle to telephone wires have been reported from east-central Illinois. This injury is caused by the larvae of the beetle using the wires inside the wire plug, and having the same effect as blowing the plug.

Illinois

J. W. McMillan (October 17): Severe injury, especially to the, is reported in the house in Johnson County.

POWELL POND BEETLES (Powell Pond Beetle, etc.)

Illinois

W. P. Flint (October 23-October 24): Several grain pests have been reported from the central part of the state, though the pest is not yet reported from the west and central parts of the state. The pest is reported from the west and central parts of the state.

POWELL POND BEETLES (Powell Pond Beetle, etc.)

J. W. McMillan (October 17): The pest is reported from the west and central parts of the state.

POWELL POND BEETLES (Powell Pond Beetle, etc.)

J. W. McMillan (October 14): The pest is reported from the west and central parts of the state.

THE INSECT PEST SURVEY  
BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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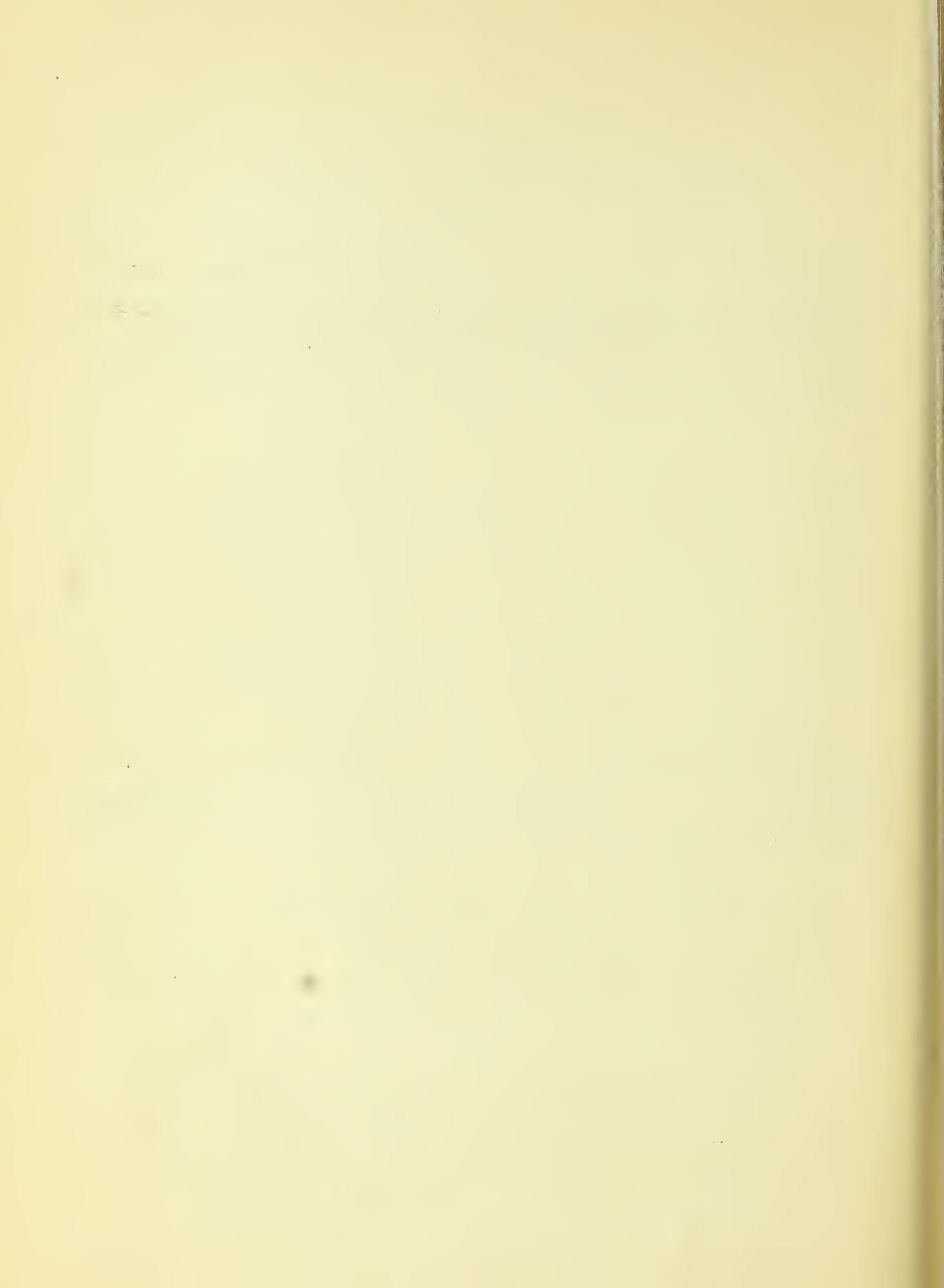
Volume 7

Summary for 1927

Number 10

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BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





## INTRODUCTION

Following the policy introduced last year we are issuing a summary of the more important insect conditions throughout the United States and Canada during the year 1927. We are also introducing in this number a new feature in having special reviews of certain insects upon which special investigations are being carried on by the Bureau of Entomology, and for which we have not published reports in the monthly numbers of the Survey Bulletins.

## GRASSHOPPERS.

The fall survey of 1926 showed enough grasshopper eggs in eastern Montana to produce a small outbreak. In California the grasshoppers in the fall of 1926 were scarce, so egg laying was slight. A decrease in the number of grasshoppers during the late summer of 1926 was reported from British Columbia. During 1927 the insects were distinctly below normal in the West-Central and East-Central States. Later in the season grasshoppers became numerous in central and southern Ohio. During July an unexpected outbreak was reported from the ranges of south-central British Columbia, a territory of 2,000 square miles being badly infested while in the Peace River region the grasshoppers, which during a number of seasons have been a serious pest, were almost completely wiped out by heavy rains in the spring. Some damage by grasshoppers was reported from southern Quebec. Late in the season (September 30) a terrific flight of the lesser migratory grasshopper (Melanoplus atlantis Riley) was reported from western Kansas.

## MORMON CRICKET.

The mormon cricket (Anabrus simplex Wold.) in the fall of 1926 was infesting practically twice the territory of the previous season in Montana, some 250,000 acres. An unusual number of eggs were laid during the fall. During June of 1927 the crickets were reported as being more abundant than in 1926, but control measures were very effective and depredations were slight.

## CORN EAR WORM.

During the winter and spring months up to May the corn ear worm (Heliothis obsoleta Fab.) was more abundant in the Puente Valley, Mexico, than it has been any season for the past four years. About the middle of February corn heavily infested was coming on the market at Brownsville, Tex. During the last week in April this insect appeared in injurious numbers in Louisiana and central Texas. First adults were ob-

served in Alabama on April 17. Eggs were very numerous by the 23d of May in the tomato plantations of that State and in Mississippi. By the first of July it was occurring in serious numbers in the South Atlantic and Gulf States as well as in southern California. During July sweet corn was more seriously injured than ever before recorded in Ohio. The insect was also more abundant than usual in Kansas. By September 1, reports of heavy damage had been received from practically the entire corn belt, the lower Mississippi Valley, and the East-Central States.

#### STALK BORER.

The stalk borer (Papaipema nebris nitela Guen.) was generally prevalent over the entire upper Mississippi Valley, reports of unusual abundance of the young larvae having been received from Indiana, Illinois, Kansas, Nebraska, and Minnesota. During July reports were received from New England, the Middle Atlantic, and the entire East-Central Areas, westward to Nebraska, Kansas, Iowa, and South Dakota. A large number of these observations were made incident to the search for the European corn borer.

#### LESSER CORN STALK BORER.

A serious outbreak of the lesser corn stalk borer (Elasmopalpus lignosellus Zell.) developed early in May in the southern part of Mississippi. Previous outbreaks occurred in 1921 and 1924. Later in the season similar injury to corn was observed near Gulfport, La.

#### LINED CORN BORER.

The lined corn borer (Hadena fractilinea Grote) caused some injury during June in the upper corn belt from western New York to southeastern Minnesota.

#### CUTWORMS.

Early in the season (March) cutworms (Noctuidae) were unusually abundant and injurious in south-central Texas. In April the army cutworm was reported in damaging numbers from Kansas and Nebraska, where the insect was attacking wheat and alfalfa. In May similar damage extended into South Dakota. In Oregon cutworms were cutting alfalfa and were very numerous in the wheat fields. Cutworm damage was also reported from Utah and indications of an outbreak of the western army cutworm in southwestern Saskatchewan and southern Alberta were reported early in the season. By the first of June it was evident that cutworm injury was not so prevalent as during the last two years over the entire country, the damage being confined to restricted areas. During June, however, cutworms were very troublesome in the entire Mississippi River Valley and Great Plains States. In <sup>the</sup> Mississippi Delta these insects caused considerable damage on the lands which had been flooded early in the season. Cutworm injury continued in the flooded areas of Mississippi, and at several points in Indiana and Nebraska, through July.

## FALL ARMYWORM.

About the middle of April the first record was received of the fall armyworm (Lophyrus frugiperda S. & M.) when it was reported as injurious to young corn in Louisiana. During August it was generally prevalent in the Southeastern <sup>States</sup> and lower Mississippi Valley, damage being exceedingly bad in the Delta region. The first serious outbreak of this insect since 1920 developed in eastern Kansas and Oklahoma during September. Minor outbreaks were recorded from Indiana, Mississippi, and Alabama, and during October considerable damage was done in central Illinois, eastern Nebraska, and Kansas.

## ARMYWORM.

The true armyworm (Girphis unipuncta Haw.) adults were observed during the first week in April in Illinois. This is about a week earlier than these insects appeared last year. During May local outbreaks were reported from parts of Missouri and Nebraska. During June moderate numbers of these insects were observed in Illinois and Indiana. In July rather heavy outbreaks developed in Iowa and South Dakota, but not so serious as was anticipated.

## WIRE WORMS.

Increasing numbers of reports of damage by wireworms (Elateridae) have been received the past few years. Serious damage this year was reported from Virginia, North Carolina, South Carolina, Indiana, Missouri, Kansas, Nebraska, Minnesota, Montana, Quebec, Manitoba, Saskatchewan, Alberta, and Vancouver Island. These insects attack a great variety of crops, corn, garden vegetables, and tobacco, and a report from Maine on the feeding of the adult beetles on fruit buds is the first record of these insects doing this type of injury in the East. For several years this method of feeding has been observed in the Pacific Northwest.

## WHITE GRUBS.

During June reports of rather severe damage by white grubs (Phyllophaga spp.) were received from the upper Great Plains region, damage being particularly severe in Iowa and southeastern Nebraska (brood A). Rather unusual numbers of these insects were also recorded from British Columbia and Manitoba. In the former province they were doing considerable damage to the roots of young fruit trees. Later in the season reports of damage were received from central and northern Indiana and Illinois. Late in August reports of damage were received from parts of Kansas.

## SPOTTED CUCUMBER BEETLE.

A very intense infestation of corn by the spotted cucumber beetle (Diaperomera undecimnotata Fab.) occurred in the cotton belt from North Carolina to Louisiana, and in the corn belt in the southern part of



the East-Central States from southern Indiana westward to Iowa and southward to Missouri, damage being particularly prevalent in the overflow areas along the Missouri and Mississippi Rivers. In the area north of this region the corn root worm D. longicornis Say was destructively abundant and immediately west of this area in Colorado a new species, D. virgifer<sup>leg</sup>, attacked corn seriously for the first time in that State.

#### HESSIAN FLY.

During the fall of 1926 the Hessian fly (Phytophaga destructor Say) was not appearing in threatening numbers east of Kansas, and the early spring situation over the Middle Atlantic and South-Central States indicated a very light infestation. In east-central Ohio there was an indication of possible damage. Owing to wet weather at harvest time in 1926 much grain shattered in Ohio, Indiana, and Illinois, and as a result there was much volunteer wheat in that region. In the North-Central States the fly was extremely scarce. The situation in Kansas was a very general infestation with indications of a decided increase this spring. This condition was also prevalent in Oklahoma. Light infestations were also reported from the California wheat belt. During May the fly progressed rapidly in Kansas and the infestation was found to be heavier than two years ago when a very serious outbreak occurred. Despite the favorable conditions early in the season there was but about 7 per cent infestation in central Illinois during May. During June the insect was reported as being negligible in Nebraska, but very serious in the 30 south-central counties of Kansas. In general, the Hessian fly did practically no damage to the wheat crop over the greater part of the wheat belt, with the exception of the very serious development in Kansas where a preliminary estimate showed a crop reduction of approximately 20,000,000 bushels. In the East-Central States, owing to the large quantity of volunteer wheat, the fly has built up a rather threatening infestation for 1928. The fall survey showed practically normal conditions in Illinois. The summer fly surveys over the Middle Atlantic States show a decidedly higher infestation than has prevailed for several years over most of this territory. Maryland has a rather high infestation of 21 per cent, most severe in the western part of the State. The fall survey in Nebraska indicated but little damage by the fall brood of flies. Indications are of a heavy infestation in Kansas. This insect was destructive for the first time in Sedgwick County, Colorado, where it was infesting as high as 10 per cent of the crop in some fields.

#### CHINCH BUG.

The chinch bug (Blissus leucopterus Say) was generally less abundant than usual in winter quarters from central Missouri eastward. In eastern Kansas and western Missouri, however, there were indications of chinch-bug trouble early in the season. Despite a very wet spring the insect passed the winter rather successfully in Illinois, but was not present in sufficient numbers to occasion alarm. Late in May reports of threatening numbers of these insects were received from Missouri and South Carolina. The continued wet weather of June practically put an end to chinch-bug



trouble in the East-Central States, and decidedly reduced the infestation in eastern Kansas and western Missouri. Destructive abundance in parts of eastern Nebraska developed during June. The North Carolina outbreak developed to be of some consequence, but not very serious. The Nebraska outbreak was much less serious than was originally anticipated. As a whole, the chinch-bug situation was not serious this year. A brood of chinch bugs is building up in the East-Central States which may cause trouble in 1928.

#### GREEN BUG.

During the winter and early spring months the green bug (Toxoptera graminum Rond.) was reported as unusually abundant in Louisiana and parts of Oklahoma and Texas, and in the Salt River Valley of Arizona. During March the Oklahoma infestation became more extensive, but no further developments were reported from other States. A small outbreak in North Carolina, with some damage, was reported late in April, after which date no further reports of this insect were received.

#### FALSE FIREWORMS.

Though generally not so prevalent as during the past few years, the plains false wireworm (Eleodes opaca Say) destroyed thousands of acres of wheat around Syracuse, Kans. It was also reported from Nebraska, and a species heretofore not known as crop pest, Eleodes tricolorata Say was recorded from the latter State. Later in the season considerable damage was done in eastern Idaho by E. hispidabris Say.

#### LEAF-LEAF WEEVIL.

(Phytonomus posticus Gyll.)

Rather severe injury to the first crop was reported from Delta, Utah. The weevil is now about 8 miles west of the Nebraska line in Wyoming, the known infestation having extended 36 miles eastward. The outbreak in Idaho is the most destructive since that of 1921. (See also Special Review.)

#### CLOVER LEAF WEEVIL.

Owing to severe wet weather last fall but little damage was experienced this year by the clover leaf weevil (Hypera punctata Fab.) in Illinois. During April this insect became unusually troublesome to alfalfa in Kansas and damage would have been very severe had it not been for heavy rains late in April. The insect also appeared early in the season in menacing numbers in Missouri, but was controlled by prolonged cool, wet weather. During early June a few reports were received from Indiana.

#### LESSER CLOVER LEAF WEEVIL.

Severe damage by the lesser clover leaf weevil (Phytonomus nigrirostris Fab.) to clover buds and seed crops was expected in Illinois

this spring, as a large number of the adults passed the winter successfully. Late in April a flight of beetles was observed about Albany, N. Y. The outbreak evidently did not develop as anticipated, as no further reports were received during the season.

#### WHEAT JOINT WORM.

Towards the end of March the wheat joint worm (Harmolita tritici Fitch) was reported as seriously damaging wheat in Stanley County, North Carolina. In southern Illinois it was much less abundant than it has been for several years, the only records being from a very few western and southwestern counties of the State and a single infestation in Hancock County of 28 per cent.

#### WHEAT STEM SAWFLY.

The wheat stem sawfly (Cephus cinctus Nort.) which was the most serious pest of the year in Saskatchewan in 1926, when it caused a loss of \$12,000,000, went into winter quarters in enormous numbers. During 1926 it spread westward until it now covers one-third of the wheat-growing areas of Alberta. A survey this year (1927) indicated that about 8 per cent of the grain was infested in Manitoba, and but little serious damage was done over the rest of the infested territory.

#### CODLING MOTH.

The codling moth (Carpocapsa pomonella L.) in the Middle West during April promised to be as serious as it was last year, a very high percentage of the larvae having passed the winter successfully. Pupation was generally later than normal from Pennsylvania westward across central Missouri. During June the situation was much more favorable, the insect being slightly more numerous than usual in the East-Central States and becoming less troublesome from Illinois westward. In the Pacific Northwest the situation at this time was very favorable. During August the infestations in the South Atlantic and East-Central States were serious enough to indicate heavy damage by the later broods. A similar situation prevailed in parts of Idaho and Colorado. Though comparatively well controlled in the Eastern States the codling moth was prevalent enough to occasion comment on the quantity of wormy fruit offered to the export trade. In many sections of the eastern part of the United States late frosts so reduced the apple crop that the initial codling-moth populations will be materially lower next spring.

#### ORIENTAL FRUIT MOTH.

The oriental fruit moth (Laspeyresia molesta Busck) appeared earlier than last year in the Fort Valley section of Georgia, and the first adult moth was observed on February 24. Twig injury became noticeable about the first of April and full-grown larvae of the first brood were observed on the 12th of the month. The peak of the second generation was reached during the first week in May, and during this month the pest was reported for the first time from Holly Springs, Miss. During June the insect was recorded for the first time from the west-central part of Georgia.

in Meriwether County and it was observed to be plentiful in Connecticut and West Virginia.

"This insect is quite widely distributed in Ohio, having been found from the most southerly to the most northerly sections of the State. The area of concentration is in southern and central Ohio although at Sandusky Mr. Stearns found a rather heavy infestation. Fortunately, the insect has not become thoroughly established as yet in the great producing area of Ohio west of Sandusky. In some instances Mr. Stearns found as much as 56 per cent of the late peaches infested with the larvae of this species. One of the gratifying aspects of the situation is that parasites are already established and actively operating in Ohio. It has been determined that six species of larval parasites are present. The total parasitism of the season averaged 18.7 per cent." (J.S. Houser, Ohio Agricultural Experiment Station, Wooster, Ohio.) (See also Special Review.)

#### APPLE AND THORN SKELETONIZER.

The apple and thorn skeletonizer (Hemerophila pariana Clerck) was decidedly below normal this year throughout the greater part of its range. It was reported for the first time from Maine during the past season, but even in badly infested orchards in New York State and New England it was not serious.

#### PEACH BORER.

The peach borer (Agrobia exitiosa Say) is somewhat more abundant than usual over the Middle Atlantic and East-Central States, reports of unusually heavy damage having been received from Georgia, Ohio, Indiana, and Illinois. In Georgia more paradichlorobenzene has been used this year than was used during the last few years owing to the unusually heavy infestations of the Fort Valley section.

#### EASTERN TENT CATERPILLAR.

The eastern tent caterpillar (Malacosoma americana Fab.) appeared to be as numerous as it was in 1926 throughout New England and the Hudson River Valley region of New York State. In the Middle Atlantic States it was apparently more abundant than last year, while in the South Atlantic States the infestations had decidedly decreased.

#### PLUM CURCULIO.

Early in the season the situation of the plum curculio (Conotrachelus nenuphar Hbst.) was more serious than it had been since 1921 in the South Atlantic States. This insect also appeared unusually early in the East-Central States. During May the insect was reported as seriously attacking the crops in Missouri, and by June it became evident that it was more abundant in New England than last year. During July damage was very general over the entire seaboard.



Contrary to the conditions during March, 1926, when fruit-aphid eggs were so extremely scarce, eggs were reported normally abundant throughout the East-Central and South eastern States with the exception of New York State where they were still reported as less abundant than usual this past spring. Eggs began hatching in the Winchester section of Virginia about the middle of March. About the same time hatching was observed in Illinois and Missouri. During April these insects were reported as generally more prevalent than last year throughout New England and subnormal in the East-Central States. Towards the end of March hatching was observed quite generally throughout southern and central Pennsylvania. In the Willamette Valley, Oregon, hatching was somewhat later, occurring about the first week in April. The rosy apple aphid (Anuraphis roseus Baker) was not unusually abundant over the Middle Atlantic and East-Central States. Aphids, other than fruit aphids, were unusually abundant over a very wide territory, extending well into Canada. In most cases these outbreaks were associated with a delayed spring and cool, wet weather. During July the infestations of aphids on ornamentals were very conspicuous in the eastern part of the United States. By the first of August, the aphids had rather abated, and but little trouble was recorded the remainder of the summer.

#### SAN JOSE SCALE.

Throughout New England the prevalence of the San Jose scale (Aspidiotus perniciosus Comst.) during the winter of 1926-27 was not at all alarming. This condition also prevailed over the East-Central States. From Maryland southward to South Carolina a general increase was being observed. In Georgia this was very decidedly checked by the twice-stabbed lady beetle, which occurred in abnormally large numbers in 1926. In the East-Central States conditions remained about as they were in 1926. In the West-Central States the insect was not considered of much economic importance. These conditions of subnormal abundance of the scale prevailed throughout the season over the eastern fruit belt. Late in the season, however, extremely warm weather in southern Indiana caused a heavy increase in the scale populations in many orchards.

#### ANOMALA.

During the year no remarkable developments of the anomala (Anomala orientalis Waterh.) were recorded.

#### CITRICOLA SCALE.

The citricola scale (Pseudococcus citricola Quayle) increased rapidly in Tulare County, California.

#### MEALYBUGS.

Infestations of the mealybug, Pseudococcus gahani Green) have been



materially heavier during 1926 in the southern California citrus belt. During the fiscal year ended June 30, 1927, the Los Angeles County Insectary propagated and distributed over the mealybug-infested orchards of the county approximately 4,000,000 adult *Cryptolaemus*, an enemy of this pest. An area of 7,000 acres was covered, using ten adult beetles per tree. Unfortunately, field conditions were such this season that, while they permitted the normal development of the mealybug, the prolonged cool, damp weather materially delayed the activity of the liberated *Cryptolaemus*. However, they have made up in part for their spring delay by a late season of activity which is resulting in satisfactory seasonal control.

#### SPOTTED CUCUMBER BEETLE.

About the middle of April very serious infestations of Satsuma oranges by the spotted cucumber beetle (*Diabrotica duodecimpunctata* Fab.) occurred in southern Mississippi. The beetle did very considerable damage to both foliage and blossoms as well as to young fruit.

#### WHITEFLIES.

Ashm.

Morgan

Whiteflies, *Dialeurodes citri* / and *D. citrifolia*, were somewhat more abundant in Florida than for several years. This was due to the comparatively poor development of the entomogenous fungi, *Negerita webberi* and *Aschersonia aleyrodis* caused by the abnormally dry summer. The citrus whitefly was found at San Benito and <sup>this</sup> is the first record of this insect in this valley of Texas.

#### AN ANT.

A species of *Solenopsis* is recorded for the first time as a serious pest of the citrus fruit in southern California. This year it practically ruined the entire first crop of tree citrons in the Lehabra Heights section east of Whittier.

#### SEED CORN MAGGOT.

Coincident with the late spring and continued cool, wet weather, outbreaks of the seed corn maggot (*Hydomyia ciliatula* Rond.) were reported early in April from North Carolina, Mississippi, and Arizona. In Arizona damage was observed during February and March. In May similar depredations were reported from Missouri. During June damage to seed potatoes was reported from Ohio, and melons and cucumbers were severely damaged in Iowa and Michigan. This insect made necessary replanting of many acres of beans in the Twin Falls District, Idaho, and did considerable damage to seed potatoes. During June similar damage was reported from Maryland, Indiana, Nebraska, Minnesota, South Dakota, and Montana.

#### CABBAGE MAGGOT.

Early in May the flies of the cabbage maggot (*Hydomyia brassicae* Bouche) were observed to be very abundant in the seed beds on Long Island,

and by the end of the month they were very prevalent throughout the northern part of New York State. In Massachusetts this insect appeared somewhat earlier than usual in the trucking district of Bristol County and late in May it was reported as doing much damage and necessitating much replanting in parts of Maryland. Scattered reports of damage were received throughout the spring from Indiana, Ohio, and Colorado. In the latter State it has increased rapidly during the last few years and is doing considerable damage. It has also spread to the western slope of the mountains in that State.

#### HARLEQUIN BUG.

Late in February reports of damage by the harlequin bug (Murgantia histrionica Hahn) were being received from many parts of Mississippi. During March and April reports came in from the entire southeastern region extending from Texas to North Carolina. This trouble continued throughout May. This trouble also continued throughout August in the upper part of its range and through September in the Gulf region. An unusual record was received from Texas where the bugs were destroying the blossoms of lilacs.

#### COLORADO POTATO BEETLE.

The first record of the season of the Colorado potato beetle (Leptinotarsa decemlineata Say) was received from Picayune, Miss., when adult beetles were observed in the field on February 21. Early in April the insects were reported as moderately abundant over Alabama and Louisiana, but the early potato crop in the Gulf region is usually produced without the need of poisoning. However, during May it was reported as doing considerable damage in parts of Alabama, necessitating control measures. Toward the latter part of May it developed in abnormal numbers in northwestern Nebraska, necessitating spraying. It was also observed in fields in Montana this month. Toward the end of April adult beetles were observed on Long Island, N. Y. The large commercial potato regions of southern Idaho are free from this pest and every effort is being made to eliminate the rather limited infestations in that State. An interesting situation has developed in regard to this insect in that in the originally infested areas of Colorado the insect rarely does severe damage. A similar condition has developed in the southern part of the Middle Atlantic States westward to Tennessee, where, though remedial measures are usually applied, whether the insect is present or not, it does very little damage even in unsprayed fields, excepting sporadically.

Difficulty in controlling the beetle this season, owing to frequent rains, is reported from the maritime provinces and Ontario. In southern Manitoba it has very decidedly increased in numbers over last year. Heavy infestations are also reported from Alberta. Infestations in British Columbia are limited to the southeastern corner of the province in an area about Creston and another extending from Cranbrook to Fernie and the Crow's Nest down to the international boundary.

#### POTATO LEAFHOPPER.

Late in March the potato leafhopper (Empoasca fabae Harr.) was ob-

served to be very abundant in winter quarters in Missouri. During May hopperburn was very serious in the early potato districts of North Carolina, in which State this insect was also seriously attacking soybeans and peanuts. Late in June damage was reported from Indiana. In northern Illinois the leafhopper was much more abundant than usual, severely injuring potatoes and beans. Similar unusual infestations were reported from Iowa and moderate infestations in the northwest portions of Ohio and in parts of South Dakota. In Kansas this insect became extremely abundant in the alfalfa fields, where it did very considerable damage though this was not easily distinguished from that produced by root diseases. The insect was also abundant in Wisconsin.

#### SUGAR BEET LEAFHOPPER.

"The sugar beet leafhopper (Eutettix tenellus Baker) has been numerous in the beet fields of Utah since early spring, and considerable curly-top disease has resulted throughout most of the State. The first noticeable injury in the northern part of Utah occurred in some fields at Lehi, Farmington, Layton, North Ogden, and Willard. The disease developed rather slowly in most parts of the State in spite of the large number of leafhoppers present throughout the season. The beets in most areas had acquired good size before late-season injury became serious, damage starting toward the end of August in most parts of the State. Before the end of the season, the beets were nearly all severely curled at Lehi, North Farmington, Lyndyl, Leamington, Grantsville, Hooper, American Fork, and North Ogden, while considerable damage had resulted in many fields at Layton, Delta, Santaquin, northwest of Provo, Goshen, Cache Junction, Lakeview, Penrose, Bothwell, Thatcher, Bear River City, Plain City, North Garland, Honeyville, Draper, and scattered fields throughout the State. Damage was fairly light in Cache Valley in some parts of Boxelder, Salt Lake, and Davis Counties, and in most fields between Naphi and Manti. Considering the State as a whole, the damage from curly-top would be proportionately less in the territory north of Manti than in areas south of this point." (C. F. Knowlton, Logan Utah.) (See also Special Review.)

#### PEA APHID.

"The pea aphid (Illinoia piri Kalt.) appeared very early in the season in threatening numbers in the alfalfa fields in parts of Oklahoma. About the middle of April reports were received of damage from parts of Kansas. The infestations in Kansas rapidly developed into an outbreak. Heavy rains, however, toward the last week in the month reduced the aphids to negligible numbers. During May reports of serious damage were received from Utah and southern California and during the latter part of that month and early June other serious damage to newly-seeded alfalfa was reported from Nebraska. The insect was also prevalent in parts of Illinois, Missouri, and Mississippi. Toward the end of June there were indications in the pea-canning districts of Wisconsin that this insect would be more than usually abundant during July. This condition prevailed up until about the middle of July when severe wind and rains reduced the outbreaks to a negligible factor. Early in the season an unusually severe infestation developed on alfalfa in Idaho. This outbreak developed while the plants were still very small and in many cases they completely elimi-



nated the first cutting. Parasites later in the season almost completely destroyed the aphids.

#### PEPPER WEEVIL.

Toward the end of March, the pepper weevil (Anthonomus eugenii Cano) did considerable damage in Santiago County, Calif. The late spring delayed the appearance of these weevils in Orange County. The first weevil to be observed was seen on July 1, and by the middle of the month the weevils were well distributed over the pepper fields of Orange County. Weevils were found this summer on a single place near Douglas and approximately 1 1/2 miles north of the United States-Mexico boundary. Infestations averaged 1 weevil or more per pepper plant. There were indications of weevil infestations on adjacent places north from Douglas in Sulphur Springs Valley.

#### RASPBERRY FRUIT WORM.

A very serious infestation of raspberries by the raspberry fruit worm (Byturnus unicolor Say) developed in the raspberry and loganberry canning districts of Washington State. This infestation became so intense that the fruit was rejected at the canneries and many growers stopped picking.

#### COTTON FLEA HOPPER.

About the middle of February the cotton flea hopper (Psallus seriatus Reut.) began to emerge at College Station, Tex., and by the middle of March this insect was emerging in rather large numbers in this locality. During late March and April eggs were hatching throughout Louisiana and considerable injury was anticipated. During the latter month it was observed that there were practically no infestations in the lower Rio Grande Valley and very few around Corpus Christi, in Texas. During May these insects were observed to be hatching in moderately large numbers in the Piedmont section of South Carolina, and during June some injury was reported from parts of North Carolina. Late in June and early in July there was slight damage in South Carolina and similar light infestations were observed in North Carolina and Georgia at that time. A little more intense infestations were observed in parts of Tennessee, while over the remainder of the cotton belt no damage was reported.

#### COTTON LEAF WORM.

The cotton leaf worm (Alabama argillacea Hübner) was decidedly later than usual in its invasion of the United States this year. It entered the cotton belt so late that very little damage resulted from the feeding of the larvae, and though a feeble northern flight was attempted, little damage was done to fruit in the northern States.



## PERIODICAL CICADA.

Brood 1 of the periodical cicada (Tibicina septendecim L.) is the first of the series of well authenticated broods of this insect, and was due to appear this year. Well substantiated records for the occurrence of this insect in southeastern Pennsylvania, south-central Maryland, Virginia, West Virginia, and North Carolina were made in 1893 by Prof. C. V. Riley and several additional localities in West Virginia were added by Dr. Hopkins at that time; the doubtful records prior to 1893 were from Kansas and Colorado. The localities in Kansas received doubtful confirmation in 1895. Some scattering reports were also recorded in 1893 from southern Indiana, Illinois, and northern Kentucky. The Maryland, North Carolina, Virginia, and West Virginia records were confirmed in 1910 and a new record from South Huntington, Long Island, was made that year. The records from Indiana, Illinois, and Kentucky were not confirmed in that year nor were those from Kansas and Colorado. The Colorado record undoubtedly refers to another species of this insect. This year Brood 1 appeared in large numbers in Roanoke, Bedford, Boutetourt, Rockbridge, Rockingham, Russell, Scott, and Wood and Preston Counties, West Virginia. Though definite efforts were made to confirm the records from the East-Central States and Kansas, no records were obtained.

## BAGWORM.

This year the bagworm (Thyridopteryx ephemeraeformis Haw.) was decidedly more prevalent and destructive than last year, particularly in the Mississippi Valley and East-central States, reports of unusual damage having been received from Delaware, Georgia, Ohio, Indiana, Missouri, Alabama, Nebraska, Kansas, and Mississippi.

## WHITE-MARKED TUSSOCK MOTH.

Early in the season eggs of the white-marked tussock moth (Hemerocampa leucostigma S. & M.) were observed quite numerous in New York, southern Ohio, and Indiana. These eggs began hatching in Ohio and Indiana the first week in June and in central New York State the last of that month. Later in the season considerable damage especially in city parks was reported from the whole East-Central region westward to Nebraska, the insect being reported as much more numerous than usual in Ohio, Indiana, Illinois, Iowa, and Nebraska. Though slight damage was reported from Delaware, this insect is at an extremely low ebb throughout New England and the Middle Atlantic States.

## BIRCH LEAF MINER.

The birch leaf miner (Pemusa pumila Klug.) was again abundant throughout Nova Scotia, eastern Massachusetts, Connecticut, Maine, and eastern New York State.

#### HEMLOCK SPANWORM.

The bad outbreak of the hemlock spanworm (Ellopiia fiscellaria Guen.) reported last year from Wisconsin has practically died out. During the past season a severe but limited outbreak occurred in Maine and small outbreaks in northern New York State and several sections of Ontario.

#### MOUNTAIN PINE BEETLE.

The epidemic of the mountain pine beetle (Dendroctonus monticolae Hopk.) which has been under way for several years in Montana has now destroyed from 50 to 70 per cent of the timber on the infested area. During the past two years the infestations have spread into the Big Hole Basin and the Missoula National Forest, from the east fork drainage of the Bitter Root. Another epidemic of this insect has started throughout the white-pine stands of northern Idaho.

#### JEFFREY-PINE BEETLE.

The infestations of the Jeffrey-pine beetle (Dendroctonus jeffreyi Hopk.) in the Inyo National Forest have materially declined this year. In the Oregon-California Control Project area, however, the heaviest losses recorded in the past 10 years were observed this year and more than 350,000 board feet of timber were killed.

#### DOUGLAS FIR BEETLE.

Throughout the western part of Montana the Douglas fir beetle (Dendroctonus pseudotsugae Hopk.) has been destroying rather alarming quantities of Douglas fir annually. The damage occurs in groups of trees scattered throughout the forested areas.

#### SPEUCE BUDWORM.

A slight outbreak of the spruce budworm (Pamphila fumiferana Clem.) in a nursery in Ohio was reported this season. Considerable damage was done along the eastern border of Michigan and 4,500 square miles north of Thor Lake in Ontario was badly infested. This latter outbreak has been in progress since 1912 and has resulted in the death of most of the firs and decidedly retarded the growth of the spruce. On the mainland east of Moose Island in the vicinity of Lake Winnipeg, Manitoba, it has entirely killed out the mature balsam and has decidedly weakened white spruce. An infestation which has been under way in the southern half of Cape Breton Island has decidedly abated during the past season.

#### LARCH SAWFLY.

The outbreak of the larch sawfly (Neodatus erichsonii Hartig) in the Spruce Woods Reserve in Manitoba has been very effectively reduced by the introduced parasite Mesoleius tenthredinus Morl., 88 per cent of the cocoons being found parasitised.

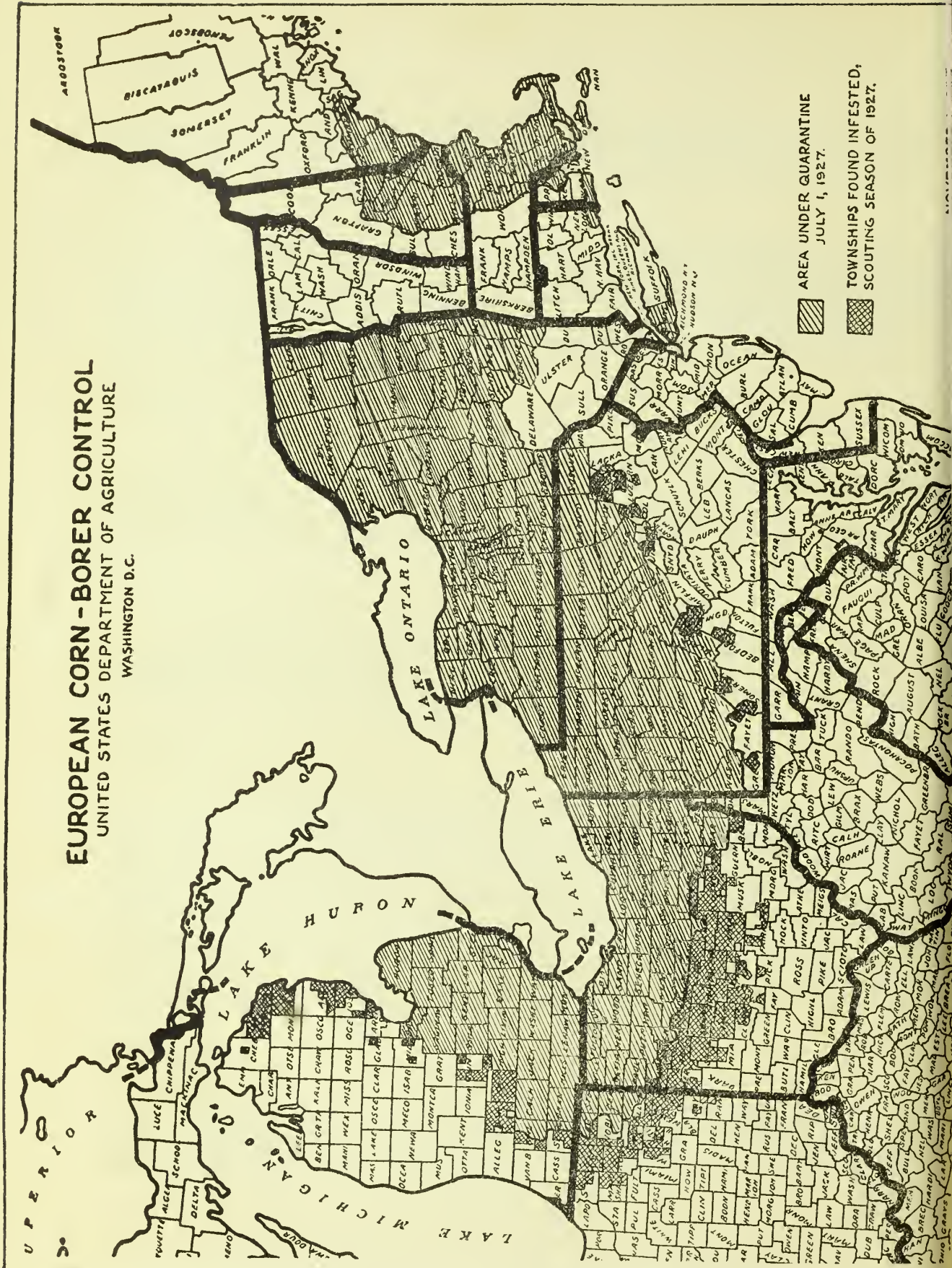




# EUROPEAN CORN-BORER CONTROL

## UNITED STATES DEPARTMENT OF AGRICULTURE

WASHINGTON D.C.





## SPECIAL REVIEWS

### EUROPEAN CORN BORER

The fall survey in New England was completed about the middle of November. This work included a comparative survey of the known infested territory and a survey to determine new infestation bordering on the known infested area. The single-generation infestation is spreading from New York eastward into New England while the two-generation infestation in New England shows a normal fluctuation.

Perhaps the most outstanding development in the corn-borer work during the past season was the \$10,000,000 corn-borer clean-up experiment. The two main objects of this campaign were to demonstrate (1) whether it was possible to retard further spread of the pest by a thorough farm clean-up of corn, stalks, etc., over the western and southern area then known to be infested with the borer and, (2) whether such a clean-up would result in the prevention of increase and, possibly, in the actual reduction of the number of borers in infested territory for the following year and thus demonstrate the practicability of control as a continuing farm practice.

The results of the 1927 campaign indicate that:

(1) It is improbable, under existing conditions governing State cooperation in such effort; that the natural spread of the borer to new territory can be retarded materially, although it is appreciated that the volume of such spread may be reduced by the thorough clean-up of the entire infested area, inclusive of the border counties and townships. Because of the inability of some States to include in the clean-up campaign the lightly infested border area, the normal spread of the pest in such areas occurred in 1927.

A total of 794 townships were added in 1927 to the area previously quarantined on account of the corn borer. The spread discovered in 1927 is shown roughly on the accompanying map.

(2) It is possible to keep down the number of borers and to prevent serious commercial damage to corn by a thorough concerted clean-up in infested territory. The infestation survey following the 1927 spring control campaign showed that the number of borers per 100 stalks in both Ohio and New York, representing two-thirds of the townships in the control area, had been reduced. The reduction in Ohio was from 6 borers per 100 stalks in 1926 to 5 borers per 100 stalks in 1927. The reduction in New York was from 12 borers per 100 stalks in 1926 to 10 borers per 100 stalks in 1927. In Michigan, however, owing to the existence of conditions decidedly favorable to the borer increase, particularly, as regards reinfestation from Canada, there was an increase in the number of borers. Pennsylvania also showed an increase. The increase in Michigan was from 12 borers per 100 stalks in 1926 to 27 borers per 100 stalks in 1927. In Pennsylvania the number increased from 7 borers per 100

stalks in 1926 to 24 borers per 100 stalks in 1927. In Indiana, the number of borers even in 1927 was less than 1 borer per 100 stalks. Over the whole area, due to conditions especially favorable to borer increase in Michigan in 1927, there were  $1\frac{1}{2}$  times as many borers in 1927 as there were in 1926. This showing, however, compares favorably with the increase to 4 times as many in 1926 as there were in 1925, when no such unified control effort was attempted. The figure for the whole area is 14 borers per 100 stalks in 1927 as compared with 9 borers per 100 stalks in 1926. Without any control effort, we probably would have had over the whole area 4 or 5 times as many borers in 1927 as in 1926 or from 35 to 45 borers per 100 stalks. This result is strongly encouraging to farmers in their efforts to control the borer in infested territory. It is thought that serious commercial injury by the corn borer can be largely prevented if farmers will adhere to the low-cutting, clean-plowing, poling, raking, and burning methods of control.

In addition to these two main objects of the campaign, the work of 1927 further supported and demonstrated conclusions which have come to be generally accepted relative to the corn borer, namely:

(1) It is possible to prevent, for the most part, long-distance spread of the borer by human agencies. The fact that no instance has been reported of a jump of one or two hundred miles by the borer that could be properly credited to transportation by human agency indicates the effectiveness of the maintenance of a strict quarantine as far as movement by human agencies is concerned.

(2) It is not possible to eradicate the borer, which fact has been repeatedly stated in the past. Repeated field tests made in the 1927 campaign demonstrated that it is impossible to eliminate every borer over any considerable area. (W. H. Larrimer, Bureau of Entomology, U. S. D. A.)

#### ALFALFA WEEVIL.

"The extensions of the territory infested by the alfalfa weevil (Phytonomus posticus Gyll.) have been inconspicuous, and have resulted in bringing in only two new counties, Douglas, in Nevada, and Niobrara in Wyoming. The borders of the infested territory are, for the most part, in mountainous regions where the spread of the insect can not be minutely followed because of the distance between fields. The damage inflicted by the alfalfa weevil has been slight, except in the vicinity of Rexburg, Idaho. The number of adult weevils present in the fields throughout the insect's range seems to be about normal." (G. I. Reeves, Bureau of Entomology, U. S. D. A.)

#### MEXICAN FRUIT WORM.

"In the spring of 1927 the Mexican fruit worm (Anastrepha ludens Loew) was discovered in the citrus plantings of the Rio Grande Valley of Texas, larvae occurring in small numbers in fruit from Mission to Brownsville. Scattered infestations, therefore, occurred throughout

the entire valley. The Federal Horticultural Board, as a result of this infestation, promulgated a quarantine restricting the movement of all host fruits from the infested territory. Eradication measures were at once undertaken, the Bureau, Board, and State Department cooperating. The measures were based on the maintenance of a host-free period, and the inspection of groves and the movement of fruit under certification. Volunteer committees were organized in the different valley towns to assist the Federal and State men, and all host fruits throughout the valley were collected and destroyed. The Mexican authorities in Matamoras cooperated in carrying into effect a similar program. As the next season's crop began to mature the valley was divided into inspection districts, each in charge of a district inspector who is held responsible for the careful inspection of all groves in his district every 30 days and the certification of groves found to be free from the fruit worm. All drops are destroyed and culls processed. The first 30-day inspection was completed on October 1, and car lots of grapefruit began moving out of the restricted area. While it is too early to predict the condition of this season's crop, the result to this writing (October 15) has been very promising, no fruit worms having been discovered since the clean-up in June." (A. C. Baker, Bureau of Entomology, U. S. D. A.)

#### ORIENTAL FRUIT MOTH.

"In sections where the oriental peach moth has been established for a number of years (five or more) the infestations this past season were light to moderate while in newly established areas they were generally severe. In the southern part of New Jersey and also in parts of Maryland the infestations were lighter than they have been for several years. In some orchards Elberta and later peaches showed less than 10 per cent injury while in previous seasons the injury has been 25 to 75 per cent. In Georgia, it appeared in the heaviest infestation ever recorded in that State." (Alvah Peterson, Bureau of Entomology, U. S. D. A.)

#### JAPANESE BEETLE.

"The spread of the Japanese beetle (Popillia japonica Newm.) during the summer of 1927 has been largely on the south and west of the infested area. To the north, approximately 30 beetles were found at Nyack, N. Y., on the west side of the Hudson River. This was the first infestation found thus far in Rockland County. No infestations were found north of the Croton River in Westchester County. On Long Island 31 beetles were found in Lindenhurst, a few miles northeast of the Nassau-Suffolk County line. In Connecticut a general infestation was found in Bridgeport and 1 beetle in New Canaan. On the west infestations were found in Pennsylvania at Weissport, Lehighton, Pottsville, Shenandoah, Sunbury, Milton, Bloomsburg, and Wilkes-Barre, 16 beetles were found in Gettysburg, 1 in York, and 2 in Mechanicsburg. In Maryland a small infestation was found in Chesapeake City. One beetle was found at Perryville, 1 at Ridgeley, 11 at Cambridge, and 30 distributed at several points in the city of Baltimore. Thirteen beetles were collected in the District of



Columbia. In Delaware 1 beetle was found at Dover, 24 at Clayton, 1 at Fort Penn, and 1 at Stanton. It is believed that the long, rainy period in August and early September did much to retard the general spread of the insect in 1927. Most of the infestations found outside of the known infested territory were located in towns and cities and were carried to those points, it is believed, largely through artificial channels, such as railroad trains, automobiles, and contraband produce." (L. B. Smith, Bureau of Entomology, U. S. D. A. )

#### MEXICAN BEAN BEETLE.

"In general, over the Southern and Eastern States, the Mexican bean beetle (Epilachna corrupta Muls.) has been more numerous and has done more damage than in 1925 and 1926. The dispersal into new territory has been the greatest in point of square miles, and about as great in point of distance, as in any year since 1920 when it was first discovered in northern Alabama. This spread has been chiefly to the east and northeast as in previous years, the beetle having reached seven counties in southwestern New York and at least five counties in Ontario, as far north as Toronto. The presence of the beetle in four southeastern counties of Michigan is very important. No predictions as to its seriousness to the large bean industry there are attempted, but it should be carefully watched. It has reached the coastal section in Virginia, occurring in injurious numbers at Norfolk. Reports from Alabama, Georgia, the Carolinas, Virginia, Tennessee, Indiana, and Mississippi state that the infestations are heavier than in 1926. In Kentucky fewer reports from growers were received at the Experiment Station, probably because of increased familiarity with the pest and the methods of control. In southern Ohio emergence from hibernation occurred a few days earlier than in 1926, the first adults being noted in the field May 23. Emergence proceeded rapidly and winter survival was higher than in 1926; 4 per cent of the beetles in large cages survived, as compared with less than 1 per cent in 1926. The spring and early summer infestation in southern Ohio was very heavy in many localities, but on account of the rapid emergence, and the scarcity of early beans due to wet weather, the egg-laying period was confined to a shorter period than usual. This resulted in a very distinct gap, after the disappearance of the overwintered beetles, and before the appearance of the first-generation beetles. Beans planted in the latter half of June had few eggs deposited on them and were not severely injured. Beans planted later were again heavily infested and in many instances were destroyed. Only the summer beans bore a normal or nearly normal crop without treatment. A large number of beetles went into hibernation, many earlier than usual, but the prolonged dry weather this fall in southern Ohio may seriously affect winter survival. In northern Alabama the survival in large cages was 16 per cent as compared with 10.8 per cent in 1926. The first beetle was noted in the field on March 31 which was 12 days earlier than in 1926. The infestations were heavier than in the preceding three years, but the yield of early beans was not much reduced, although the fields which were not plowed under immediately after picking were defoliated. Later beans and pole



beans were severely damaged. The fall crop was not severely damaged, the beetles going into hibernation earlier than usual and also probably migrating. The prolonged drought in that section may reduce winter survival." (N. F. Howard, Bureau of Entomology, U. S. D. A.)

#### VEGETABLE WEEVIL.

"Scouting for the vegetable weevil (Listroderes obliquus Gyll.) has been carried on during the past year, with the result that the known distribution has been considerably extended. Thirteen infestations in six counties of the San Francisco Bay region have been found at the following points: San Rafael, Vallejo, Martinez, Berkeley, Agnew, San Jose, Palo Alto, Menlo Park, Sweeney Station, Half Moon Bay, Millbrae, South San Francisco, and at a point about 2 miles south of Colma. In 1926 it was known only at Berkeley, San Jose, and Palo Alto. All of the other infestations have been added during the past year.

Most of the above infestations are very light and each covers a very limited area. Commercial damage has resulted in only four places, namely, at San Jose, Palo Alto, Martinez, and Agnew. The most severe infestation, which covered a single 13-acre truck farm in 1926, has spread to about four times that area in the course of one year. Some of the infestations, as the one at Palo Alto, were much lighter in 1927 than 1926, probably owing to the fact that but a single crop of tomatoes was grown during the year. Sufficient adults were not produced, owing to lack of food plants for larval development, to cause economic loss as was the case at this point in 1926. It is believed that infestations will not be heavy except in truck-crop areas where host plants are grown continuously throughout the year.

The weevil is known to occur in 32 counties in Mississippi, 7 in Alabama, 8 in Louisiana, and 2 in Florida. It has been more abundant the past year than before in southern Mississippi, and the indications are that it is moving north quite rapidly. When it was first found in southern Mississippi it was only in small infestations, and up to the present season it has been difficult to find during the summer months. However, during 1927 it has been found in the fields every month of the year to date, and in larger numbers than ever before. The weevil continued to be inactive during the summer months, but it was very active the other nine months of the year." (M. M. High and H. C. Lewis, Bureau of Entomology, U. S. D. A.)

#### SUGARBET LEATHOPPER.

"The only damage occurring in the Idaho area this year was due to a movement of summer-brood Eutettix tenellus which occurred about the 15th of June. The only places where seriously large populations existed were on the outskirts of the irrigated tract close to the bad breeding grounds. It so happened that these isolated fields were also late-planted or in poor cultural conditions for the most part. Where the cultural conditions were excellent, however, and the beets were planted

during the normal planting time, excellent crops were harvested and the highest yields in the history of the Twin Falls and Burley areas obtained. Conditions in east Idaho area were also excellent as far as freedom from Entettix tenellus was concerned. An area in the west end of the Snake River Valley which was more or less experimental gave a yield of 22 tons to the acre on 300 acres planted. In the Sevier Valley, Utah, a very mixed condition holds. There was a considerable movement of insects into the valley early in May, though the populations were not uniform. Those areas where the populations were high suffered severely, but some sections gave fair averages. In both the Idaho and Sevier Valley areas the percentage of E. tenellus bearing the curly-top virus was very low." (Walter Carter, Bureau of Entomology, U. S. D. A.)

#### SUGARCANE BORER.

"The damage from the sugarcane borer (Diatraea saccharalis Fab.) was high in Louisiana in 1927. The winter of 1926-27 was rather dry and favored hibernation. The spring development was at least a month earlier than usual. By August 1 as much as 60 per cent of the stalks of sugarcane were infested in some fields, and the increase was rapid until at the time for cutting (October 1 and later) the stalk infestation over the sugar section of Louisiana averaged 32.8 per cent, with some fields having an infestation of 100 per cent. It is estimated in a preliminary way that there was a loss of 27 per cent of the sugar crop from the moth borer in 1927.

Examinations on the spread of the moth borer were not made in 1927, but it is known that little new territory is acquired from one year to another. Roughly, the territory occupied in the southern half of Louisiana, the southern half of Florida, the coast of Texas, the coast of Mississippi, and a section around Woodville, Miss." (T. E. Holloway and W. E. Haley, Bureau of Entomology, U. S. D. A.)

#### GYPSY MOTH.

"As a result of the exterminative measures used by the Bureau of Entomology with the infested States cooperating, no additional territory has been found infested by the gypsy moth (Porthetria dispar L.) during the past year. There has been a decrease in the infested area in New Jersey and New York. Conditions in the barrier zone in western New England and eastern New York have improved and it has been possible to release from quarantine 13 towns in Vermont and 2 in Connecticut. East of this area the infestations were more severe than during the previous year, and the parasites and natural enemies have not been effective this season. In Massachusetts feeding was especially severe in Bristol, Plymouth, Norfolk, Middlesex, and Essex Counties. Large areas were almost entirely defoliated north of Lake Winnepesaukee in New Hampshire, and the acreage in the Lake Sebago section of Maine was the largest that has ever occurred in that State. In Rhode Island there were several heavily defoliated areas. A survey including the heaviest infested areas in all of the New England States showed partial to complete defoliation in 142,000 acres.

Considerably over one-half of this area showed from 75 to 100 per cent defoliation. The infestations have increased in the territory between the Connecticut River and the barrier zone and intensive work will be necessary to prevent reinfestation of the barrier zone." (A. F. Burgess, Bureau of Entomology, U. S. D. A.)

#### SATIN MOTH.

"The satin moth (Stilpnotia salicis L.) has continued to spread and increase in abundance. Willow and poplar trees have been entirely defoliated in many villages along the New England Coast from Yarmouth, on Cape Cod, to Biddeford, Maine, and as far west as Nashua, N. H., Leominster, Mass., and Providence, R. I. In several cases the caterpillars have swarmed over and into dwellings after defoliating near-by shade trees. This insect has crossed the Connecticut River at Holyoke, Mass., and is present in most of the area east of a line drawn from Holyoke to Conway, N. H. In Maine it was found during the summer as far north as Skowhegan and Bangor, and east to the City of Ellsworth. The quarantine line has been extended to include 88 more towns in Maine, 4 more in New Hampshire, and 25 more in Massachusetts." (A. F. Burgess, Bureau of Entomology U. S. D. A.)

#### ORIENTAL MOTH:

"According to casual observations the oriental moth (Cnidocampa flavescens Walk.) was more abundant than usual during the summer of 1927 in the older infested area. Many of its favored food plants were entirely defoliated. It is most abundant in Boston and the surrounding towns and cities and has been found in Swampscott during the present season." (A. F. Burgess, Bureau of Entomology, U. S. D. A.)





THE INSECT PEST SURVEY  
BULLETIN

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A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

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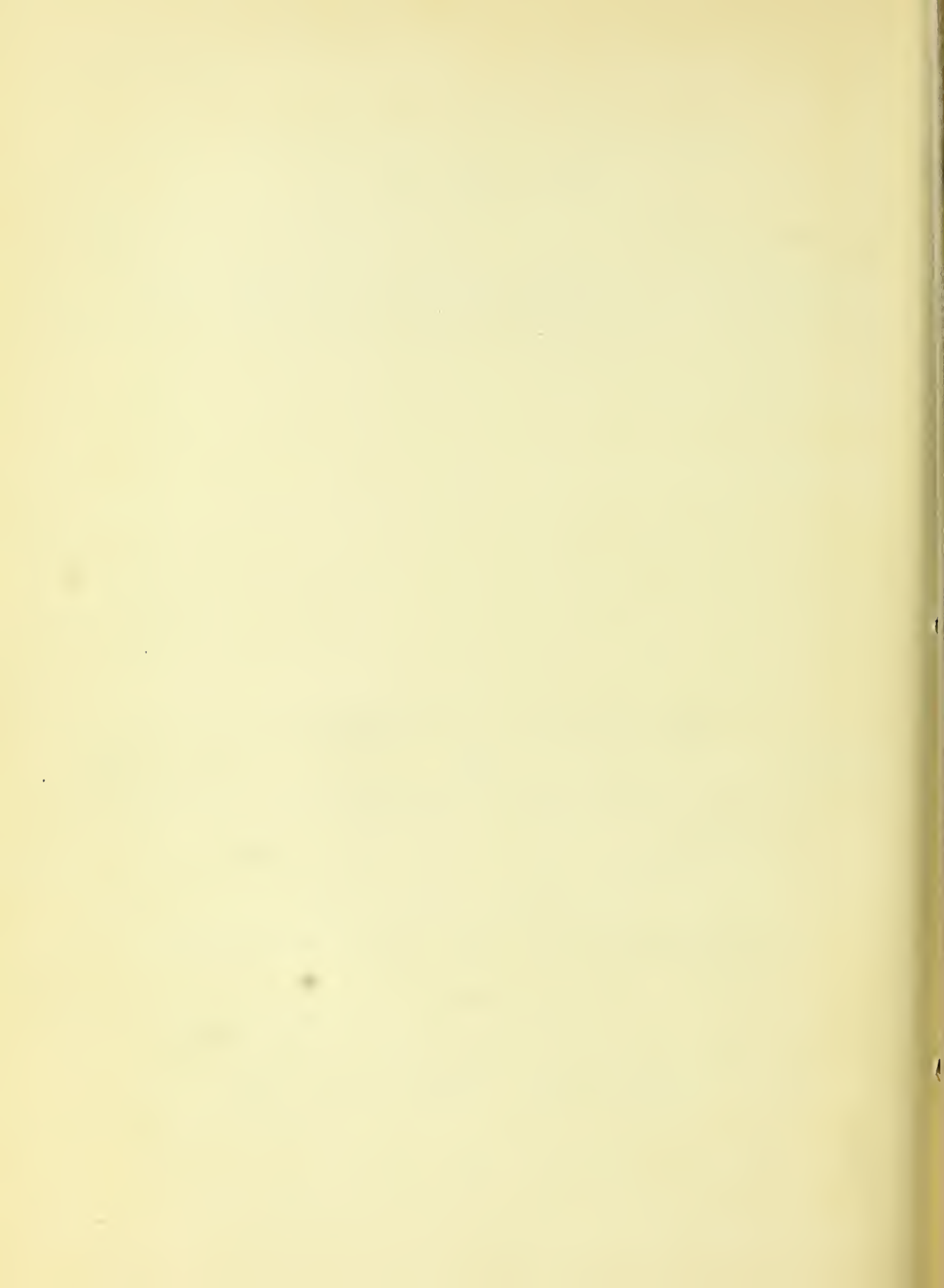
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Chrysanthemum lacebug ....	<i>Corythucha marmorata</i> Uhler
Cigar case bearer a.n.o. ....	<i>Coleophora fletcherella</i> Fern.
Cigarette beetle a.n.o. ....	<i>Lasioderma serricorne</i> Fab.
Citricola scale ....	<i>Pseudococcus citricola</i> Quayle
Citrus mealybug a.n.o. ....	<i>Pseudococcus citri</i> Risso
Citrus thrips (Orange thrips a.n.o.) ....	<i>Scirtothrips citri</i> Moul.
Clear-winged grasshopper a.n.o. ....	<i>Camnula pellucida</i> Scudd.
Clover aphid a.n.o. ....	<i>Anuraphis bakeri</i> Cowan
Clover bud worm ....	<i>Phytonomus nigrirostris</i> Fab.
Clover head weevil ....	<i>Phytonomus moles</i> Fab.
Clover leafhopper ....	<i>Agallia sanguinolenta</i> Prov.
Clover leaf miner ....	<i>Paractopa albicostella</i> Braun
Clover leaf weevil a.n.o. ....	<i>Hypera punctata</i> Fab.
Clover mite a.n.o. ....	<i>Bryobia praetiosa</i> Koch
Clover root borer ....	<i>Hylastinus obscurus</i> Marsh.
Clover seed midge a.n.o. ....	<i>Dasyneura leguminicola</i> Lint.
Codling moth a.n.o. ....	<i>Carpocapsa pomonella</i> L.
Coffee-bean weevil a.n.o. ....	<i>Anacercus fasciculatus</i> DeG.
Colorado potato beetle a.n.o. ....	<i>Leptinotarsa decemlineata</i> Say
Confused flour beetle ....	<i>Tribolium confusum</i> Duv.
Corn and cotton wireworm ....	<i>Horistonotus uhleri</i> Horn
Corn ear worm a.n.o. ....	<i>Heliothis obsoleta</i> Fab.
Corn-feeding syrphus fly ....	<i>Mesogramma polita</i> Say
Corn flea beetle ....	<i>Chaetocnema pulicaria</i> Melsh.
Corn leaf aphid a.n.o. ....	<i>Aphis maidis</i> Fitch
Corn root aphid a.n.o. ....	<i>Anuraphis maidi-radici</i> Forbes
Corn root worm a.n.o. ....	<i>Diabrotica longicornis</i> Say
Cotton aphid a.n.o. ....	<i>Aphis gossypii</i> Glov.
Cotton bucculatrix ....	<i>Bucculatrix gossypiella</i> Morrill
Cotton flea hopper ....	<i>Psallus seriatus</i> Reut.
Cotton leaf worm a.n.o. ....	<i>Alabama argillacea</i> Hubn.
Cotton square dauber ....	<i>Lygus elisus</i> Van D.
Cottonwood borer ....	<i>Plectrodera scalator</i> Fab.
Cottonwood dagger ....	<i>Acronycta populi</i> Riley
Cottonwood dagger moth ....	<i>Acronycta lepusculina</i> Guen.
Cottony-cushion scale a.n.o. ....	<i>Icerya purchasi</i> Mask.
Cottony maple scale a.n.o. ....	<i>Pulvinaria innumerabilis</i> Rathv.
Cowpea curculio a.n.o. ....	<i>Aphis medicaginis</i> Koch
Curlew bug ....	<i>Sphenothorus callosus</i> Oliv.
Currant aphid ....	<i>Myzus ribis</i> L.
Currant bud mite ....	<i>Eriophyes ribis</i> Nal.
Currant fruit fly a.n.o. ....	<i>Epochra canadensis</i> Loew
Cyclamen mite a.n.o. ....	<i>Tarsonemus pallidus</i> Banks

See

Destructor scale ..... *Aspidiotus destructor* Signoret  
 Diamond-back moth a.n.o. .... *Plutella maculipennis* Curtis  
 Differential grasshopper a.n.o. .... *Melanoplus differentialis* Thos.  
 Dingy cutworm a.n.o. .... *Feltia subgothica* Haw.  
 Dog flea a.n.o. .... *Ctenocephalus canis* Curtis  
 Douglas-fir beetle a.n.o. .... *Dendroctonus pseudotsugae* Hopk.

E

Eastern tent caterpillar a.n.o. .... *Malacosoma americana* Fab.  
 Eggplant flea beetle a.n.o. .... *Epitrix fuscula* Cr.  
 Eggplant lacebug a.n.o. .... *Cargaphia solani* Heid.  
 Eggplant leaf miner ..... *Phthorimaea glochinella* Zell.  
 Elm borer a.n.o. .... *Saperda tridentata* Oliv.  
 Elm case bearer a.n.o. .... *Coleophora limosipennella* Dup.  
 Elm leaf beetle a.n.o. .... *Galerucella xanthomelaena* Schrank  
 Elm leaf miner a.n.o. .... *Kaliocenusula ulmi* Sund.  
 Elm scurfy scale a.n.o. .... *Chionaspis americana* Johns.  
 Euonymus scale a.n.o. .... *Chionaspis euonymi* Const.  
 European corn borer a.n.o. .... *Pyrausta nubilalis* Hubn.  
 European elm scale a.n.o. .... *Gossyparia spuria* Moleer  
 European hen flea ..... *Ceratophyllus gallinae* Schr.  
 European leaf-mining sawfly ..... *Fenusa pumila* Klug  
 European pine shoot moth a.n.o. .... *Evetria buoliana* Schiff.  
 European red spider ..... *Paratetranychus pilosus* Can. & Fanz.  
 European willow beetle ..... *Flagiobdera versicolora* Laizh.  
 Eye-spotted bud moth ..... *Spilonota ocellana* D. & S.

F

Fall armyworm a.n.o. .... *Laphygma frugiperda* S. & A.  
 Fall cankerworm a.n.o. .... *Alsophila pometaria* Harr.  
 Fall webworm a.n.o. .... *Hyphantria cunea* Drury  
 False chinch bug a.n.o. .... *Nysius ericae* Schill.  
 False cottony maple scale ..... *Pulvinaria acericola* Walsh & Riley  
 Field cricket a.n.o. .... *Gryllus assimilis* Fab.  
 Fig scale ..... *Lepidosaphes ficus* Sign.  
 Fire ant a.n.o. .... *Solenopsis geminata* Fab.  
 Flat-headed apple tree borer a.n.o. .... *Chrysobothris femorata* Oliv.  
 Flax armyworm ..... *Barathra configurata* Walk.  
 Florida flower thrips ..... *Frankliniella tritici bispinosa* Morgan  
 Flour mite ..... *Tyroglyphus farinae* DeG.  
 Flower thrips a.n.o. .... *Frankliniella tritici* Fitch  
 Flower webworm ..... *Homoeosoma electellum* Hulst  
 Forest tent caterpillar a.n.o. .... *Malacosoma disstria* Hubn.  
 Four-spotted bean weevil ..... *Mylabris quadrimaculatus* Fab.  
 Four-spotted cabbage flea beetle .... *Phyllotreta bipustulata* Fab.  
 Fruit tree leaf beetle ..... *Syneta albida* Lec.  
 Fruit tree leaf roller a.n.o. .... *Archips argyrospila* Walk.



See

Fuller's rose beetle a.n.o. ....Pantomorus fulleri Horn

G

Garden flea hopper a.n.o. ....Halticus citri Ashm.  
 Garden slug .....Agriolimax agrestis L.  
 Garden springtail a.n.o. ....Sminthurus hortensis Fitch  
 Garden webworm a.n.o. ....Loxostege similalis Guen.  
 Giant hickory aphid .....Longistigma caryae Harr.  
 Gloomy scale a.n.o. ....Chrysomphalus tenebricosus Comst.  
 Goldenglow aphid .....Macrosiphum fudbeckiae Fitch  
 Golden polistes .....Polistes aurifer Sauss.  
 Golden tortoise beetle a.n.o. ....Metritona bicolor Fab.  
 Gouty vein gall .....Dasyneura communis Felt  
 Grape berry moth a.n.o. ....Polychrosis viteana Clem.  
 Grape colaspis a.n.o. ....Colaspis brunnea Fab.  
 Grape curculio a.n.o. ....Craponius inaequalis Say  
 Grape leaf folder a.n.o. ....Desmia funeralis Hübner.  
 Grape leafhopper a.n.o. ....Erythroneura comes Say  
 Grape leaf skeletonizer a.n.o. ....Harrisina americana Guer.  
 Grape phylloxera a.n.o. ....Phylloxera vitifoliae Fitch  
 Grape root worm a.n.o. ....Etidia viticida Walsh  
 Grape vine aphid a.n.o. ....Macrosiphum illinoisensis Shimer  
 Gray banded leaf roller .....Eulia mariana Fern.  
 Gray blister beetle a.n.o. ....Epicauta cinerea Forst.  
 Great Basin tent caterpillar .....Malacosoma fragilis Stretch  
 Green bug a.n.o. ....Toxoptera graminum Rond.  
 Green clover worm a.n.o. ....Plathypena scabra Fab.  
 Green dock beetle .....Gastroidea cyanea Melsh.  
 Green fruit worm a.n.o. ....Grapholitha antennata Walk.  
 Green June beetle a.n.o. ....Cotinis nitida L.  
 Green peach aphid a.n.o. ....Myzus persicae Sulz.  
 Green stink bug a.n.o. ....Acrosternum hilaris Say  
 Green strawberry slug .....Empria ignota Norton  
 Green-striped maple worm a.n.o. ....Anisota rubicunda Fab.  
 Greenhouse leaf tyer .....Phlyctaenia ferrugalis Hon.  
 Gulf coast fritillary .....Dione vanillae L.  
 Gypsy moth a.n.o. ....Porthetria dispar L.

H

Harlequin bug a.n.o. ....Murgantia histrionica Hahn  
 Hawthorn leaf miner .....Profenusa collaris MacG.  
 Hemlock spanworm .....Ellopiia fiscellaria Guen.  
 Hessian fly a.n.o. ....Phytophaga destructor Say  
 Hickory aphid .....Longistigma caryae Harr.  
 Hickory bark beetle a.n.o. ....Scolytus quadrispinosus Say  
 Hickory nut curculio .....Conotrachelus affinis Boh.  
 Hickory shoot curculio .....Conotrachelus aratus Germ.



See

Hickory shuckworm .....	<i>Laspeyresia caryana</i> Sling.
Horn fly a.n.o. ....	<i>Haematobia irritans</i> L.
Horse botfly a.n.o. ....	<i>Gastrophilus intestinalis</i> DeG.
House cricket a.n.o. ....	<i>Gryllus domesticus</i> L.
House fly a.n.o. ....	<i>Musca domestica</i> L.
Human flea .....	<i>Pulex irritans</i> L.

I

Imbricated snout beetle a.n.o. ....	<i>Epicaerus imbricatus</i> Say
Imperial moth a.n.o. ....	<i>Basilona imperialis</i> Drury
Imported cabbage worm a.n.o. ....	<i>Pieris rapae</i> L.
Imported currant worm a.n.o. ....	<i>Pteronidea ribesi</i> Scop.
Indian-meal moth a.n.o. ....	<i>Plodia interpunctella</i> Hubn.
Introduced pine sawfly a.n.o. ....	<i>Diprion simile</i> Hartig
Iris borer a.n.o. ....	<i>Macronoctua onusta</i> Grote

J

Japanese beetle a.n.o. ....	<i>Popillia japonica</i> Newm.
Jeffrey-pine beetle a.n.o. ....	<i>Dendroctonus jeffreyi</i> Hopk.
Juniper scale .....	<i>Diaspis carueli</i> Targ.
Juniper webworm .....	<i>Ipsolopinus marginellus</i> Fab.

K

Kafir ant .....	<i>Solenopsis molesta</i> Say
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L

Larch case bearer a.n.o. ....	<i>Coleophora laricella</i> Hubn.
Larch sawfly a.n.o. ....	<i>Nematus erichsonii</i> Hartig
Larder beetle a.n.o. ....	<i>Dermestes lardarius</i> L.
Late strawberry slug .....	<i>Empria maculata</i> Norton
Leaf crumpler a.n.o. ....	<i>Mineola indigenella</i> Zell.
Leaf-footed bug a.n.o. ....	<i>Leptoglossus phyllopus</i> L.
Lesser bulb fly a.n.o. ....	<i>Emerus strigatus</i> Fallén
Lesser clover leaf weevil .....	<i>Phytonomus nigrirostris</i> Fab.
Lesser corn stalk borer a.n.o. ....	<i>Elasmopalpus lignosellus</i> Zell.
Lesser grain borer .....	<i>Rhizopertha dominica</i> Fab.
Lesser peach borer a.n.o. ....	<i>Sesia pictipes</i> G. & R.
Lilac leaf miner .....	<i>Gracilaria syringella</i> Fab.
Lima bean vine borer .....	<i>Monoptilota pergratialis</i> Hulst
Lined corn borer .....	<i>Hadena fractilinea</i> Grote
Locust borer a.n.o. ....	<i>Cyllene robiniae</i> Forst.
Locust leaf miner a.n.o. ....	<i>Chalepus dorsalis</i> Thumb.
Locust twig borer .....	<i>Ecdytolopha insiticiaria</i> Zell.
Locust twig gall .....	<i>Ecdytolopha insiticiaria</i> Zell.
Long spruce cone gall .....	<i>Chermes cooleyi</i> Gillette
Lubber grasshopper a.n.o. ....	<i>Brachystola magna</i> Gir.

M

See

Magnolia scale a.n.o. ....	Neolecanium cornuparvum Thro.
Malaria mosquito .....	Anopheles quadrimaculatus Say
Maple chaitophorus .....	Periphyllus aceris L.
Maple leaf miner .....	Gracilaria negundella Chamb.
March fly .....	Bibio albipennis Loew
Margined blister beetle a.n.o. ....	Epicauta cinerea marginata Fab.
Marguerite fly .....	Marguerite leaf miner
Marguerite leaf miner .....	Phytomyza chrysanthemi Kowarz
Mealy plum aphid a.n.o. ....	Hyalopterus arundinis Fab.
Mediterranean fruit fly a.n.o. ....	Ceratitis capitata Wied.
Melon aphid a.n.o. ....	Aphis gossypii Glov.
Metallic strawberry root borer .....	Graphops pubescens Melsh.
Mexican bean beetle a.n.o. ....	Epilachna corrupta Muls.
Mexican fruit worm .....	Anastrepha ludens Loew
Mormon cricket a.n.o. ....	Anabrus simplex Hald.
Mosquitoes .....	Culicidae
Mottled willow borer .....	Cryptorhynchus lapathi L.
Mountain pine beetle a.n.o. ....	Dendroctonus monticolae Hopk.

N

Negrobug a.n.o. ....	Thyreocoris pulicarius Germ.
Northern leaf-footed plant-bug .....	Leptoglossus oppositus Say
Norway maple aphid .....	Periphyllus lyropicta Kessler

O

Oak pill gall .....	Cincticornia pilulae Walsh
Oleander aphid .....	Aphis nerii Fonsc.
Oleander scale .....	Aspidiotus hederæ Vall.
Onion maggot a.n.o. ....	Hylemyia antiqua Meig.
Onion thrips a.n.o. ....	Thrips tabaci L.
Orange maggot a.n.o. ....	Anastrepha ludens Loew
Oriental fruit moth .....	Laspeyresia molesta Busck
Oriental moth a.n.o. ....	Cnidocampa flavescens Walk.
Oyster shell scale a.n.o. ....	Lepidopsahes ulmi L.

P

Pale tussock moth a.n.o. ....	Halisidota tessellaris A. & S.
Pale western cutworm a.n.o. ....	Porosagrotis orthogonia Morr.
Parsley stalk weevil .....	Listronotus latiusculus Boh.
Parsnip webworm a.n.o. ....	Depressaria heracliana DeG.
Pea aphid a.n.o. ....	Illinoia pisi Kalt.
Peach borer a.n.o. ....	Aegeria exitiosa Say
Peach twig borer a.n.o. ....	Anarsia lineatella Zell.
Pear leaf blister mite a.n.o. ....	Eriophyes pyri Pgst.
Pear midge a.n.o. ....	Contarinia pyrivora Riley
Pear psylla a.n.o. ....	Psyllia pyri L.
Pear slug a.n.o. ....	Eriocampoides limacina Retz.
Pear thrips a.n.o. ....	Taeniothrips inconsequens Uzel

See

Pecan bud moth .....	<i>Proteopteryx bolliana</i> Sling.
Pecan leaf case bearer .....	<i>Acrobasis nebulella</i> Riley
Pennsylvania wood roach .....	<i>Parcoblatta pennsylvanica</i> DeG.
Pepper weevil a.n.o. ....	<i>Anthonomus eugenii</i> Cano
Periodical cicada a.n.o. ....	<i>Tibicen septendecim</i> L.
Pharaoh's ant .....	<i>Monomorium pharaonis</i> L.
Pickle worm .....	<i>Diaphania nitidalis</i> Stoll
Pigeon hippoboscid .....	<i>Lynchia maura</i> Bigot
Pine bark louse .....	<i>Chermes pinicorticis</i> Fitch
Pine leaf miner .....	<i>Paralechia pinifoliella</i> Chamb.
Pine leaf scale .....	<i>Chionaspis pinifoliae</i> Fitch
Pink boll worm a.n.o. ....	<i>Pectinophora gossypiella</i> Saund.
Pistol case bearer a.n.o. ....	<i>Coleophora malivorella</i> Riley
Plains false wireworm a.n.o. ....	<i>Eleodes opaca</i> Say
Plum curculio a.n.o. ....	<i>Conotrachelus nenuphar</i> Hbst.
Plum web-spinning sawfly .....	<i>Neurotoma inconspicua</i> Norton
Poplar borer a.n.o. ....	<i>Saperda calcarata</i> Say
Poplar curculio .....	<i>Cryptorhynchus lapathi</i> L.
Poplar tent maker .....	<i>Melalopha inclusa</i> Hubn.
Potato aphid a.n.o. ....	<i>Illinoia solanifolii</i> Ashm.
Potato flea beetle a.n.o. ....	<i>Epitrix cucumeris</i> Harr.
Potato leafhopper .....	<i>Empoasca fabae</i> Harris
Potato stalk borer a.n.o. ....	<i>Trichobaris trinotata</i> Say
Potato stem borer .....	<i>Gortyna micacea</i> Esp.
Potato tuber worm a.n.o. ....	<i>Phtherimaea operculella</i> Zell.
Powder post beetle .....	<i>Lyctus cavicollis</i> Lec.
Pustule scale .....	<i>Asterolecanium pustulans</i> Ckll.
Puss caterpillar .....	<i>Megalopyge opercularis</i> S. & A.
Putnam's scale a.n.o. ....	<i>Aspidiotus ancylus</i> Putn.

R

Raspberry cane borer a.n.o. ....	<i>Oberea bimaculata</i> Oliv.
Raspberry fruit worm a.n.o. ....	<i>Byturus unicolor</i> Say
Raspberry sawfly a.n.o. ....	<i>Monophadnoides rubi</i> Harr.
Reddish elm snout beetle .....	<i>Magdalis armicollis</i> Say
Red-humped caterpillar a.n.o. ....	<i>Schizura concinna</i> S. & A.
Red spider .....	<i>Tetranychus telarius</i> L.
Red turnip beetle .....	<i>Entomoscelis adonidis</i> Pal.
Red turpentine beetle a.n.o. ....	<i>Dendroctonus valens</i> Lec.
Rhododendron lacebug a.n.o. ....	<i>Stephanitis rhododendri</i> Horv.
Rhubarb curculio a.n.o. ....	<i>Lixus concavus</i> Say
Rice weevil .....	<i>Calendra oryza</i> L.
Rose aphid a.n.o. ....	<i>Macrosiphum rosae</i> L.
Rose chafer a.n.o. ....	<i>Macrodactylus subspinosus</i> Fab.
Rose curculio a.n.o. ....	<i>Rhynchites bicolor</i> Fab.
Rose leafhopper a.n.o. ....	<i>Empoa rosae</i> L.
Rose leaf roller .....	<i>Archips rosaceana</i> Harr.
Rose scale a.n.o. ....	<i>Aulecaspis rosae</i> Bouche'
Rose slug (Rose sawfly a.n.o.) .....	<i>Caliroa aethiops</i> Fab.



See

Rose stem sawfly .....	<i>Adirus trimaculatus</i> Say
Rosy apple aphid a.n.o. ....	<i>Anuraphis roseus</i> Baker
Rosy hispa .....	<i>Anoplites inaequalis</i> Web.
Round-headed apple tree borer a.n.o....	<i>Saperda candida</i> Fab.
Rusty plum aphid a.n.o. ....	<i>Hysteroneura setariae</i> Thos.

S

Saddle-back caterpillar a.n.o. ....	<i>Sibine stimulea</i> Clem.
Salt-marsh caterpillar a.n.o. ....	<i>Estigmeno acraea</i> Drury
Salt-marsh mosquito .....	<i>Aedes sollicitans</i> Walk.
San Jose scale a.n.o. ....	<i>Aspidiotus perniciosus</i> Comst.
Santo Domingo cane butterfly .....	<i>Calisto pulchella</i> Lathy.
Satin moth a.n.o. ....	<i>Stilpnotia salicis</i> L.
Screw worm a.n.o. ....	<i>Cochliomyia macellaria</i> Fab.
Scurfy scale a.n.o. ....	<i>Chionaspis furfura</i> Fitch
Seed corn beetle .....	<i>Agonoderus pallipes</i> Fab.
Seed corn maggot a.n.o. ....	<i>Hylemyia cilicrura</i> Rond.
Semitropical armyworm .....	<i>Prodenia eridania</i> Cram.
Sheep botfly a.n.o. ....	<i>Oestrus ovis</i> L.
Shot-hole borer a.n.o. ....	<i>Scolytus rugulosus</i> Patz.
Silky ant a.n.o. ....	<i>Formica fusca subsericea</i> Say
Six-spotted grape beetle .....	<i>Pelidnota punctata</i> L.
Smartweed borer .....	<i>Pyrausta ainsliei</i> Hein.
Smartweed caterpillar .....	<i>Acronycta oblonga</i> A. & S.
Smut beetle .....	<i>Phalaris politus</i> Welsh.
Snowball aphid .....	<i>Anuraphis viburnicola</i> Gill.
Soft scale a.n.o. ....	<i>Coccus hesperidum</i> L.
Southern corn stalk borer a.n.o. ....	<i>Diatraea zeacolella</i> Dyar
Southern green stink bug a.n.o. ....	<i>Nezara viridula</i> L.
Southern pine beetle a.n.o. ....	<i>Dendroctonus frontalis</i> Zimm.
Southern pine sawyer a.n.o. ....	<i>Monochamus titillator</i> Fab.
Spider mite gall .....	<i>Phyllocoptes toxicophagus</i> Eving
Spinach leaf miner .....	<i>Pegomya hyoscyami</i> Panz.
Spiraea aphid .....	<i>Aphis spiraeicola</i> Patch
Spotted cucumber beetle a.n.o. ....	<i>Diabrotica duodecimpunctata</i> Fab.
Spotted cutworm a.n.o. ....	<i>Agrotis c-nigrum</i> L.
Spotted ladybird .....	<i>Megilla maculata</i> DeG.
Spring cankerworm a.n.o. ....	<i>Paleacrita vernata</i> Peck
Spruce budworm a.n.o. ....	<i>Harmoloba fumiferana</i> Clem.
Spruce gall aphid .....	<i>Adelges abietis</i> L.
Spruce leaf miner .....	<i>Recurvaria piceaella</i> Kearf.
Spruce sawfly a.n.o. ....	<i>Neodiprion abietis</i> Harr.
Squash beetle a.n.o. ....	<i>Epilachna borealis</i> Fab.
Squash borer a.n.o. ....	<i>Melittia satyriniformis</i> Hubn.
Squash bug a.n.o. ....	<i>Anasa tristis</i> DeG.
Stable fly a.n.o. ....	<i>Stomoxys calcitrans</i> L.
Stalk borer a.n.o. ....	<i>Papaipema nebris nitela</i> Guen.
Sticktight flea a.n.o. ....	<i>Echidnophaga gallinacea</i> Westw.
Strawberry crown borer a.n.o. ....	<i>Tyloderma fragariae</i> Riley



E1

Tamarisk scale .....	<i>Chioraspis etrusca</i> Leon.
Tarnished plant bug a.n.o. ....	<i>Lygus pratensis</i> L.
Three-cornered alfalfa hopper .....	<i>Stictocephala festina</i> Say
Three-lined fig borer .....	<i>Ptychodes trilineatus</i> L.
Throat bot fly a.n.o. ....	<i>Gastrophilus nasalis</i> L.
Thurberia weevil .....	<i>Anthonomus grandis thurberiae</i> Pierce
Tip moth .....	<i>Rhyacionia bushnelli</i> Busck <i>Rhyacionia frustrana</i> Comst.
Tobacco flea beetle a.n.o. ....	<i>Epitrix parvula</i> Fab.
Tobacco thrips .....	<i>Frankliniella fusca</i> Hinds
Tomato suckfly .....	<i>Dicyphus minimus</i> Uhler
Tomato worm a.n.o. ....	<i>Protonarce sexta</i> Johan.
Toothed flea beetle .....	<i>Chaetocnema denticulata</i> Ill.
Trail ant .....	<i>Crematogaster lineolata</i> Say
Tropical fowl mite .....	<i>Limonyssus bursa</i> Berlese
Tulip scale .....	<i>Toumeyella liriodendri</i> Gmel.
Turkey gnat a.n.o. ....	<i>Simulium meridionale</i> Riley
Turnip aphid a.n.o. ....	<i>Rhopalosiphum pseudobrassicæ</i> Davis
Turnip weevil a.n.o. ....	<i>Listroderes obliquus</i> Gyll.
Turpentine borer .....	<i>Buprestis apricans</i> Host.
Twig girdler a.n.o. ....	<i>Oncideres cingulata</i> Say
Two-lined chestnut borer a.n.o. ....	<i>Agrilus bilineatus</i> Web.

U

See

Ugly nest cherry worm ..... *Archips cerasivorana* Fitch  
 Unicorn caterpillar a.n.o. .... *Schizura unicornis* S. & A.  
 Upland corn wireworm ..... *Melanotus pilosus* Elatch.

W

Walnut caterpillar a.n.o. .... *Datana integerrima* G. & R.  
 Walnut scale a.n.o. .... *Aspidictus juglans-regiae* Comst.  
 Wavy-striped flea beetle ..... *Phyllotreta sinuata* Steph.  
 Wax moth a.n.o. .... *Galleria mellonella* L.  
 Webbing clothes moth a.n.o. .... *Tineola biselliella* Hum.  
 Western army cutworm ..... *Chorizagrotis auxiliaris* Grote  
 Western pistol case bearer ..... *Coleophora sacramento* Heinrich  
 Western spotted cucumber beetle a.n.o. .... *Diabrotica soror* Lec.  
 Western wheat stem sawfly ..... *Cephus cinctus* Nort.  
 Wheat head armyworm a.n.o. .... *Neleucania albilinea* Hubn.  
 Wheat joint worm a.n.o. .... *Harmolita tritici* Fitch  
 Wheat stem maggot a.n.o. .... *Meromyza americana* Fitch  
 Wheat straw worm a.n.o. .... *Harmolita grandis* Riley  
 Wheat wireworm a.n.o. .... *Agriotes mancus* Say  
 White marked tussock moth a.n.o. .... *Hemerocampa leucostigma* S. & A.  
 White peach scale a.n.o. .... *Aulacaspis pentagona* Targ.  
 White-pine weevil a.n.o. .... *Pissodes strobi* Peck  
 Willow leaf beetle ..... *Galerucella decora* Say  
 W-marked cutworm a.n.o. .... *Agrotis unicolor* Walk.  
 Woolly alder aphid a.n.o. .... *Prociphilus tessellatus* Fitch  
 Woolly apple aphid a.n.o. .... *Eriosoma lanigerum* Hausm.  
 Woolly beech aphid ..... *Prociphilus imbricator* Fitch  
 Woolly beech leaf aphid ..... *Phyllaphis fagi* L.  
 Woolly elm aphid a.n.o. .... *Eriosoma americanum* Riley  
 Woolly larch aphid ..... *Chermes strobilobius* Kalt.  
 Woolly pine scale ..... *Pseudophilippia quaintancii* Ckll.

Y

Yellow-necked caterpillar a.n.o. .... *Datana ministra* Drury  
 Yellow-spotted willow slug ..... *Pteronius ventralis* Say

Z

Zebra caterpillar a.n.o. .... *Manestra picta* Harr.













